

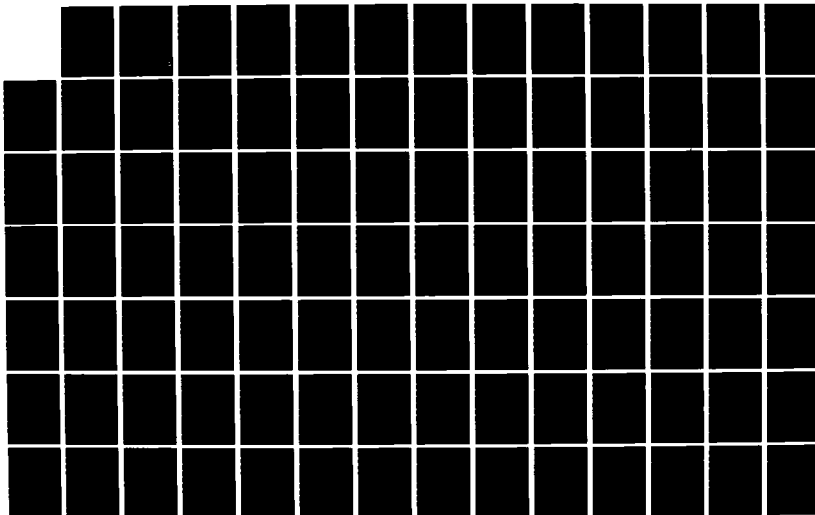
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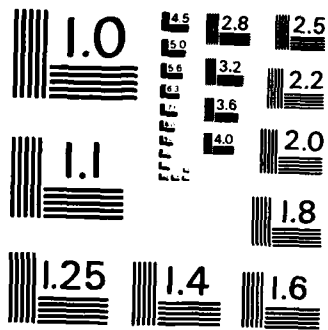
ANTITANK WARFARE SEMINAR HELD IN WASHINGTON DC ON 14-15 1/2  
OCTOBER 1976(U) BATTELLE COLUMBUS LABS ON TACTICAL  
TECHNOLOGY CENTER OCT 76 DRAK40-78-C-0004

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<p>This document is a transcript of a conference held in Washington, D.C., October 14-15, 1976, with various members of the U. S. Armed Services and industry and Col. Hans-Ulrich Rudel, the most highly decorated member of the German Armed Services in World War II. Col. Rudel was a JU-87 Stuka Luftwaffe pilot, and his most notable achievement was the destruction of 519 Soviet tanks with his JU-87 "G" Stuka which was fitted with two 37-mm antitank cannons.</p> <p>Park I of the document is an English translation of the questions asked Col. Rudel and his answers. Part II of the document is a transcript of the questions and answers in German.</p>			
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ANTITANK WARFARE SEMINAR

14-15 October, 1976

Washington, D.C.

TRANSCRIPT

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**PART I**  
**ENGLISH TEXT**

**PART I TRANSLATORS**

**Mr. P. M. Sprey**

**Maj. Tash**

**Capt. L. O. Ratley III**

ABSTRACT

This document is a transcript of a conference held in Washington, D.C. on 14-15 October 1976, with various representatives of the U.S. Armed Services and Industry and Colonel Hans-Ulrich Rudel. Col. Rudel was the most highly decorated member of the German Armed Services in World War Two. Col. Rudel was a JU-87 *Stuka Luftwaffe* pilot and his most notable achievement was the destruction of 519 Soviet tanks with his JU-87 "G" *Stuka* which was fitted with two 37 mm antitank cannons.

The U.S. interest in Col. Rudel was stimulated in the past by the situation confronting NATO today of a massive Warsaw Pact advantage in armored vehicles-- especially tanks. The information obtained from Col. Rudel at this conference and recent studies on air to ground antitank warfare, tend to support the thesis that a tremendous reservoir of information is available from *Luftwaffe* antitank experience that is directly applicable to the NATO/Warsaw Pact situation in Europe today.

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## NOTES TO THE READER

This document is divided into two parts. The first is a transcript of the questions asked Col. Rudel and the answers as translated from the German answers. The second part of the work is a transcript only of the material that was asked and answered in the German original. There are slight differences in PART I (the translations as rendered at the conference) and PART II (which was translated later from a recording of the entire conference). If the reader has a particular interest in any area covered in PART I, he (she) should also refer to the translated German original in PART II. The slight differences are due to the loss of a certain portion at the German original during simultaneous translations as opposed to not having any time limit when working with recorded material. Due to the poor quality of the tape recorder used, some of the material is unintelligible and is so indicated in the text.



TAPE I SIDE I

INTRODUCTION

CHAIRMAN:

I would like to introduce Capt. Lon Ratley who will give a brief rundown of the war on the Eastern Front as fought through the German eyes. Capt. Lon Ratley is assigned to AFIT (unintelligible), but he is going to Postgraduate School in Monterey, California with the Navy. His thesis subject was Close Air Support and he is trying to draw analogies -- I think quite successfully -- between the war of the '40s and the possible war in the near future; or in the next 10 to 15 years. In his research he did go to Germany, he speaks fluent German, and he did examine the Archives and spoke to German Generals. He was fortunate enough to be able to find Col. Rudel and spend a delightful time interviewing him for his research paper. It was the outgrowth of that effort that has led to where we are today.

What I'd like to do is have Capt. Ratley give a brief overview of the war on the Eastern Front, give you background on Col. Rudel himself, and then we will go into a seminar session. In order to make it reasonable. we will try to restrict the participants to those people that are sitting at the table. Then, we will go into the question and answer period. We will let the topics flow as they may.

TAPE I SIDE I

Col. Rudel, I assure you, will be true to his word. He'll be candid and frank with his answers and when they hurt and are not quite what we want to hear, we'll be fortunate enough to hear them anyway. That is the purpose of this meeting.

Let me, for my own edification and for everybody else here, go around the table and show Col. Rudel who's here. I am Col. Bob Dilger; I am the Director of A-10 Armament. To my left is Gen. Brill. He is the System Program Director for the A-10 program. Next to him is Mr. Wilson, from the Office of Strategic Research - CIA. Close Air Support is one of the prime subjects they are looking at this time. Next to him is Fred Feer who has worked with Peter in some related areas of conventional warfare. Mr. Mike Mecca is next. He is a retired Air Force Officer, 105 driver and now very much involved in the A-10 program from a viewpoint of employment, among other things. Next, Mr. Fred Frederickson. Mr. Frederickson is formerly from Land Warfare of DDR&E. He is now in an analysis program, System Planning Program. Next to him is Mr. Sprey. Mr. Sprey was formerly in the group that is now called ASDPA&E and he was very active in the formulation stage of the A-10. He was the man that introduced me to the work of Col. Rudel back when I was (ineligible) for the A-10 program from the concept formulation viewpoint. Moving to the other side is, Mr. Tom Christy.

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He is the head of ASD/PA&E (Tac Air). Next to him is Bernie Bock, Deputy Director of the DDR&E (General Purpose Forces). Then, Gen. Smith, ADCS Air Headquarters Marine Corps. Tom Turner is next, Vice President of Fairchild Industries. He also works for Gen. Brill. Gen. McMullen, who is next, was formerly Director of the A-10 program and is now director of all requirements for TAC. This is a new job for him and we in the A-10 are delighted that he is here. Next to him is Maj. Tash who will help with the interpretation. He speaks fluent German. I would like to find a seat for Mr. Meyers up here at the table. Mr. Chuck Meyers is from DDR&E (Air Warfare). This is an unusual position to have at a meeting like this, but he recently took over responsibility for the A-10.

So, with this, I would like to turn the meeting over to Capt. Lon Ratley. He will give us a brief overview of the War on the Eastern Front and a background on Col. Rudel for those of you that have not read his book. Then we will go into seminar session.

CAPTAIN LON RATLEY:

Good morning gentlemen. I am Capt. Ratley. Col. Dilger already explained what we are going to go through basically; a recap of the campaign on the Eastern Front and a few words about the German anti-tank aircraft.

TAPE I SIDE I

The code name for the German plan for the campaign against Russia was "BARBAROSSA." Basically, the plan consisted of twelve weeks; three weeks for the capture of Smolensk, three weeks for resupply and rest and then six weeks thereafter would be the capture of Moscow. There were 3330 German tanks used in this campaign, opposing approximately 22-24 thousand Russian tanks. About 3.2 million German soldiers and about 4.5 million Russian troops located in Western USSR.

QUESTION: By General Brill

Were these all *Tigers*? (Referring to the German tanks.)

ANSWER:

No sir, there were no *Tigers* at that time. They were *Panzer III's* and *IV's*. Later in the war the Germans used the *Panther* (which was in the 40 ton class) and the *Tiger* (in the 60 ton class).

CAPTAIN LON RATLEY:

The German execution of the campaign went according to plan, until the capture of Smolensk which fell on 16 July, 1941, that is where their difficulty started. There was some question about the strategic objectives of the campaign. Hitler decided that, in lieu of immediately going for the rail and communication center in Moscow, he would attack instead to the South and

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capture large numbers of disorganized Soviet troops in the Ukraine. This was quite a successful operation. However, when they shifted the weight of the campaign back to the North to Moscow, there was insufficient strength left to permit the Germans to effect the capture Moscow prior to the onset of winter weather.

Through December '41, these figures you see here are rough, but approximately 3 million Russian POW's, 17,500 Russian tanks destroyed, 2000 Russian aircraft were destroyed the first day. I might add that that figure is somewhat suspect. The *Luftwaffe* reported 1800 aircraft were destroyed. Back in headquarters Marshall Goering at the time didn't believe them and he sent his own special people out to the field to investigate. Subsequently he discovered it wasn't 1800, it was in fact over 2000. Basically the winter campaign deteriorated to static warfare. German losses during the winter were primarily due to their unpreparedness for winter; as opposed to any offensive action by the Soviets. There were excessive command changes on the German side because of the failure to take Moscow. Primarily *Guderian* and *Hoth* who were the two prime architects of the *Blitzkrieg* and armored tactics. All three army group commanders, (*Von Leeb*, *Von Bock*, and *Von Runstedt*) were also relieved. The summer offensive of 1942 had two primary objectives; *Stalingrad* and the oil fields at *Baku* on the Caspian Sea.

TAPE I SIDE I

The execution miscarried with the failure to hold Stalingrad. Ninety percent of the city was captured by the Germans, but ten percent was not. Subsequently, the Russians moved in and were successful in surrounding Stalingrad and capturing the Sixth Army. At the same time, a special Army Group "A" (it is difficult to see from this map but Stalingrad is here on the Volga, Army Group "A" penetrated down here by the Caucasus Mountains and advanced patrols-even reached the Caspian Sea. You don't see this much in History books, but they did in fact reach the Caspian Sea. It is down in this area. As you can see, this extended right wing of the German Army put them in an extremely precarious position because they were not able to hold Stalingrad.

At this point entered Marshall Von Manstein. He was successful in a series of defensive battles on its left wing, and therefore, enabled the Germans to withdraw Army Group "A" back to its jumping off position. In March of 1943 he successfully counterattacked the Russians in Kharkov and they suffered a severe defeat there and the initiative passed back into German hands. This led to the German Summer offensive in 1943 at the battle of Kursk. This was a Russian salient that protruded into the German lines around the city of Kursk. It was the Germans plan to pinch off this salient by concentric attacks from the north and south. The planning

TAPE I SIDE I

for the campaign was characterized by a lot of deception, delays and differences of opinion. Von Manstein had opted for an immediate attack at Kursk, before the onset of the rainy season, immediately after the battle of Kharkov in March. One thing led to another, and the actual offensive did not start until July 1943. The allies, as you know, landed in Sicily on the 12th of July and Hitler called off the offensive at Kursk in order to withdraw the Second SS Panzer Corps into Italy to counter allied landings. It is generally agreed that after the battle of Kursk, any possibilities for a total German victory on the Eastern Front disappeared. That is not to imply that they lost the war there, only that the war could not be totally won.

The final campaigns from 1943 to '45 basically consisted of a war of attrition with the initiative swinging to the Soviets and a gradual German defeat. There were no spectacular battles after the battle of Kursk. Field commanders, because of mistrust between major field commanders and OKW Headquarters, were not given enough authority in the field to fully exploit all of the situations that presented themselves. For example, the defensive line, because they taught them "not one step backwards," could not be straightened so as to preclude the number of miles of front that any given division would have to defend.

TAPE I SIDE I

There was also a marked deterioration in mobile warfare because of worn-out equipment, lack of fuel and logistics support.

A little bit about anti-tank aircraft: Two were primarily used, the HS-129 and *Stuka* "G" Model that Col. Rudel flew. The HS-129 carried a 30 mm cannon on a center line mount. The JU87-G carried two pod mounted 37 mm cannons mounted outboard from the main landing gear. This is a shot of the HS-129. Of this particular version here, there were only 6 or 9 built, I'm not sure exactly which. This isn't the 37, this is the 75 mm cannon that was used. This particular aircraft was considered ponderous and was only used for individual tanks that had broken through the front and were a threat to the major areas to the rear of the German divisions. Today we are primarily concerned with the *Stuka*. You can see a standard "D" Model here without the cannons. It is important to note that the *Stuka* was considered in 1939 by the Germans to be an aircraft that was not up to modern standards. It was not considered a modern front line aircraft by the Germans in 1939. Yet, it was used up until the very end of the war. This is a picture of the "G" Model *Stuka* with the individual cannons mounted here, each weighing about 1000 pounds and each carrying (you can see it here) a magazine of six 37 mm shells each. Col. Rudel had 2000 of these in his properties.



TAPE I SIDE I

Twenty-one hundred of which were with the                      and 400  
of which were in the FW-190.

A little background on Col. Rudel: he was born in 1916 in Silesia, his father was an Evangelist Minister. He joined the *Luftwaffe* in 1936, going into pilot training, subsequently posted to the *Stuka* squadron and from there he was transferred to a reconnaissance squadron and then back to a *Stuka* squadron. From there his first actual bomb dropping combat did not start until the Russian campaign of June 1941. Thereafter, he was promoted very rapidly, ending the war as a *Geschwader* commander which would be roughly equivalent to an augmented AF Wing today. He was primarily responsible for introducing the *Stuka* with the 37 mm cannons, into operational use in Russia. His tally on tanks was 519, that he personally destroyed. The figure is somewhat misleading because the Germans required that the tank burn and also explode before it was considered a kill. So, roughly you can multiply that by a factor of two or three to get a more realistic picture of how many tanks Col. Rudel personally destroyed.

He was decorated personally by Hitler with the Knights Cross, Golden Oak Leaf, Swords & Diamonds, only one of which was awarded -- to Col. Rudel. He is the highest decorated German soldier in the 2nd World War.

That concludes my portion.

TAPE I SIDE I

CHAIRMAN:

Let me just add a few comments to it and then we will go to the seminar. It was the *Stuka* which was an important part of the *Blitzkrieg* concept, that was to provide mobile firepower to the rapid advancing forces. Even though the Germans were out numbered, for example, in Russia by a large magnitude, by lightning tactics they were able to get on the edge of Moscow in a matter of 6 weeks or thereabouts. That was a 1200 mile advance, against overwhelming numerical superiority on the other side. The thing that Lon did not mention was that Colonel Rudel also sunk the largest ship of the war by air. The battleship *Murat*. He also sank a cruiser. The 2500 sorties, as it turns out, in the latter part of the war, when the German *Luftwaffe* was enormously outnumbered in the air. The Soviets actually had air supremacy for all practical purposes. The tank kills that he had, again did not occur during the early part of the war at all. His tank kills occurred primarily after the introduction of the gun on the *Stuka*. And it was over the lively debate that took place within the *Luftwaffe* forces, as to whether that one could even do this, so Rudel was much impressed with the accuracy of a gun system and did the basic "R and D flying". He brought it out to operational lines and introduced it through a combination of tactics. He came enormously successful in his venture there. So most of the kills occurred in the later part of the war, almost all with the gun system. And they occurred under a

TAPE I SIDE I

situation that would be difficult to comprehend from a viewpoint of numerical superiority on the opposite side. A tank kill also had to be verified by another person. The tank had to burn, it had to explode and another person had to verify it. Then you had a tank kill, and not before. Two or three to me, is a conservative estimate of what really occurred.

Now, unfortunately, I was outranked. So I cannot be a participant in the seminar. All I can be is the Chairman. I'd like to throw it open to questions and we will interpret to make sure Col. Rudel understands the questions as well, and we will interpret back. We will go slowly.

QUESTION:

Bob, I'd like to ask the Colonel this... Colonel, in addition to the tanks that you shot at, did you keep a record of the trucks or artillery pieces or other vehicles accompanying the tanks or did you not even bother to shoot at them?

ANSWER:

Yes, he did both attack and keep some numeration of the things he shot at. Unfortunately these records were stolen from him so they are unavailable to anybody right now. He can't account for all of them, but did, in fact, account for over 300 vehicles and 80 anti-aircraft positions that he had destroyed.

QUESTION:

Almost all the kills I guess were in the *Stuka*. Now, you said 37 mm, 6 rounds per magazine?

TAPE I SIDE I

ANSWER:

Yes sir.

QUESTION:

So those were really single shot?

ANSWER:

Yes sir. I've already talked with him about this so I can answer your question. Usually what he would do is attack from slant range of about 300 meters.

QUESTION:

(Unintelligible)

ANSWER:

No, he'd fire two simultaneously. He would attempt to fire two at the same time; one from each gun.

QUESTION:

Your slant range was 200 meters? Let him answer that.

ANSWER:

The guns were harmonized to shoot at 400 meters but Col. Rudel found it was difficult for him to be as exact as he wanted to be in order to effect a kill by shooting at those ranges. He would usually go down to 200 sometimes 100 or 150. He had to be very exact in his deliveries and he had to hit the tank in a vulnerable area where the tungsten-carbide center would penetrate the fuel or ammunition storage area in order to effect a kill. He couldn't do this at further slant range because of the accuracy.

QUESTION:

TAPE I SIDE I

Now, given you had a very short open fire (unintelligible) what sort of ground air threat was involved? Was there organized arms activity or, because of the dynamics of the situation, was it nonexistent?

ANSWER:

When the Russian tanks would break through the front, as with any attack, their logistics train would become somewhat strained. *Flakpanzer*, the guns that are mounted on a tank chassis would fall behind the tanks. Therefore, the problem would present itself: Tanks that had broken through the front ...had turned out it was much more difficult of course...and his attacking with his aircraft would be coordinated with other aircraft that would attack the *Flak* positions on the ground. Also, he would make multiple passes at the tank (unintelligible) Generally speaking, there would only be one (inintelligible)

QUESTION:

What sort of aircraft provided *Flak* suppression?

ANSWER:

There were two anti-tank squadrons in his wing. Pardon me, there was only one anti-tank flight of aircraft, it was called aircraft (unintelligible) a very strong squadron of aircraft. What he would do in an attack, there would be other *Stukas* in his wing that normal *Stukas* without the cannons on, would bomb, would attack the *Flak* positions through coordinated effort.

QUESTION:

TAPE I SIDE I

Were these bombs (unintelligible)

ANSWER:

The *Stuka* would carry a bomb that could (unintelligible) and the bombs had a fuse in them that was set at 50 cm at that time, which would allow them to explode above the ground (unintelligible). They would carry about a 4 pound bomb inside, similar to our "Rockeye".

QUESTION:

How long (unintelligible)

ANSWER:

About 50 seconds.

QUESTION:

Would you ask him to give us a review of the attack profile, dive angle, air speed, altitude, when he'd generally try to roll in, that type of thing?

ANSWER:

If they had a cloud deck of 200 meters and they had to fly underneath that and then with a very relatively flat attack angle. They didn't take into account the height of the clouds...When they were not paying attention to their cloud decks, then they would normally start between 800 and 1500 meters. They would circle around until they found the tank itself. The problem was not actually shooting or killing the tank, but it was finding the tank. Being able to visually acquire their target, that is where they spent most of their time. He added too that speed was poison for finding

TAPE I SIDE I

tanks. Normally they would fly at 250 kilometers, but when they were at an angle of 20 to 30 degrees, they would dive. It would be about...320. They had aerodynamic problems with the aircraft. If you got at 320 kilometers, you'd get oscillations.

QUESTION:

This was only the cannon aircraft?

ANSWER:

Yes, this was for the cannon. The cannon would not fire accurately if you went over 350. The regular aircraft would go 450 in a dive.

QUESTION:

Kilometers per hour you're talking about?

ANSWER:

Everything is in kilometers per hour.

The cannon itself was the controlling factor. It was definitely the aerodynamics of the cannon which limited the airspeed. Normally their landing speed was 180 and their cruising was 250. Because the cannon was the most important thing, they would let the cannon control all of the speed. That was the thing that actually killed the tank so everything else fell to the side.

QUESTION:

180 kilometers for this landing with the aircraft...  
with the cannon (unintelligible)

ANSWER:

TAPE I SIDE I

About 140.

QUESTION:

Pierre mentioned something about speed is poison?

ANSWER:

Yes, there is just a little phrase at the end of what he was saying about that the essence is to find tanks. Once you find them, you can shoot them with a reasonable candor and the phrase he used was that in finding tanks speed is poison.

QUESTION:

Could I quote that?

ANSWER:

Ask him it is not my statement. Let's not take it out of context. He says that really speed is absolutely catastrophic and it is a poison when you are trying to kill a tank because you can get too fast. You will over shoot the tank and then you've wasted your mission.

QUESTION:

Before Tom comes in, let's finish developing our point. General Smith said don't quote it out of context. We advocate low speeds for discrimination. General Smith, your point is going to be what?

ANSWER:

You've got to take the whole warfare into context. In other words, if you can't survive what surrounds you, you are not going to survive the shoot. Speed is catastrophic when you are trying to find something, and a tank is not too much



TAPE I SIDE I

different from a truck. If you are in foliage, the slower you can go certainly improves your eyeball action capability and then you've got to keep in sight everything that is going around you too. You know the equation balances out very quickly; what is coming at you determines your speed and if you're going to survive the kill.

QUESTION:

This is the question that I was going to ask. We've mentioned that they did try *Flak* suppression, but we haven't mentioned what other kinds of air defense flying you were under while you were circling, looking for tanks. While you were flying 250 kilometers at a couple of hundred meters. What about rifle firing, what about machine gun firing, what about all of the other things that you would encounter. How did you avoid these?

ANSWER:

They had to deal with everything from pistols on up and they had soldiers that had fallen on their backs who would just shoot up into the air and when you had 100 soldiers in front of the tanks or with the tanks and you just had to pass through it and you encountered (unintelligible). He says that he often had 30 or 40 hits in the airplane and as long as none of those hits, all calibers, as long as none of those hits were in the radiator, it really wasn't a big problem. (Unintelligible.)

END TAPE I SIDE I

TAPE I SIDE II

ANSWER CON'T:

...until such time as he has through his experience and seat of the pants feeling and he could see the slant range to the tank, he would roll out just for a second, stabilize his platform and fire and then immediately start jinking again. That's a very important point, let me emphasize that. I went over that with Colonel Rudel. He says that his line up time from wings level until firing with the cannon was between 1 and 1 1/2 seconds, and I believe that's accurate because he quotes for bombing 3 to 4 seconds line up time for experienced pilots. He said, however, there was no way you could get a pilot out of ordinary training to be able to hit a tank with only one second line up time. On the other hand, he said it was absolutely essential for survival to hold it down to that. And, of course, in an airplane, that would be less limited by its cannons, you know, that one second for cannons versus three or four seconds for bombing, in and of itself, would be a tremendous survival advantage. Younger pilots, to continue augmenting what Mr. Sprey said, had a lot of difficulty because they couldn't, quite frankly, they couldn't "see" the same slant ranges that Col. Rudel could. They simply didn't have the experience and hadn't had enough practice to be able to roll out just momentarily and let two rounds go and start jinking again. The majority of the losses that they had with the antitank aircraft were in a phase where the pilot would roll out, track the target and then fire. I might add that just based on a conversation I had with Col. Rudel yesterday, that

TAPE I SIDE II

you had to be very canny in working with the Russians. He said often he would come into the area, a wooded area, and finally after making several orbits, he would spot a tank and then, he said, something would just not look right to him, it would look fishy, and so he would maybe wait ten more minutes and then he might spot a *Flak* battery or they would finally just get disgusted with waiting and they would open up on him. They would expend all of their munitions that they had at the time and then he could go in and attack the tank, after the enemy had expended all of their *Flak* at him. It is very individual the way that a pilot is going to attack tanks. He rates that as a very important factor in survival in addition to the tactics that he is talking about. That sense for a tactical situation for telling when there was a *Flak* trap set up and when there wasn't. He refers to it as just intuition and also constant exposure to get that sixth sense it is absolutely essential to be flying every single day. A few weeks away from the front you lose contact with the situation, you lose contact with the latest tactics of the enemy. He says it is very dangerous when you come back after you've been out of contact for a few weeks.

QUESTION:

He said he typically operated from 1500 meters from the front?

ANSWER:

No, 1500 meters in cruise altitude.

TAPE I SIDE II

QUESTION:

Okay then, how typically...

ANSWER:

Your question as to how far depended on the particular time of the war and where the airfield happened to be. It could be anywhere from 17 to 100 kilometers. It is impossible to say. But he definitely stresses experience. It was a very important thing. That is why it was impossible for young people to survive the way he did because they did not have the experience.

QUESTION:

One other question along that same line, when he arrived in target area, I assume that he had no problem finding a target area...was there any control at all over the Air Force like today with airborne air controllers and so forth, or did he have to be brought in by external means?

ANSWER:

He stresses particularly experience. With the young pilot the aircraft flies the pilot. With the very experienced pilot, it is the pilot that is flying the machine. He says that he practically slept in his machine. He'd be going from 3 in the morning until eight or nine in the evening. He was constantly with the machine itself and it was the fact that he had total control over his aircraft that made the big difference.

CHAIRMAN:

Excuse me for just a minute. We've been going for one

TAPE I SIDE II

hour now. Suppose we take a 15 minute break. We've only scratched the surface of Mr. Christie's question. I don't know the size of the flights, I don't know the tactics involved. I don't know the coordination of the captain. We will open up session with those kind of questions. Did he rendezvous, how was it controlled, how did they get there, how did they get back?

INTERMISSION

CHAIRMAN:

I appreciate the patience of everybody at this time. We have made a few changes. One is that I've asked here, because he speaks fluent German, Mr Sprey to sit up here so that we get the full impact of what is being translated. It is easy to lose some of what is being translated. Secondly, there was a suggestion made and I concur that what we ought to do is set up a random shotgun blasting rather than questions that bounce all around, to all kinds of issues, that we take phases of the problem and we restrict questions to you know like command and control or whatever one at a time and stay with it until we have exhausted it to our satisfaction, then press on to the next topic area. There was one other thing, they have to have the tape recorder down here to get a better pick up and they have asked me to ask everybody to speak up when they ask the questions so that it is picked up and if not for me to repeat the questions to make sure that it is picked up

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on the recorder.

QUESTION:

What are you going to do with the tape?

QUESTION:

Who's doing the taping? Bill McLaurin

ANSWER:

Yes, if I may. Bill McLaurin is a professional journalist. We thought it might be very good if he wrote a piece on how he sees the discussion then pass it around to the people who were here to make sure it was a truthful reflection of Col. Rudel's comments. That was the idea, to get a professional journalist, so to speak, to give an interpretation.

CHAIRMAN:

Let me make an observation, it is a viewpoint of mine, and I don't know if it is held by anybody else, but Col. Rudel has had enormous experience, but in a different era under different conditions and different times and I think it is incumbent upon us who have some influence on this era on this time that we listen to the history as it were and we are each responsible for how well that translates into today's world. It may not translate at all or it might be almost 100 per cent translateable with each of us. We are not here to quarrel with what happened 30 years ago, we are here to find out what happened 30 years ago.

With that, I'd like to pick up with where Mr. Christie's question dropped off. That is, we are trying to build the

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scenario that took place more or less typically and I guess when you really get down to it, there is no such thing as a typical mission. Questions like how many people flew in the flight? Was it a flight of one, a flight of two or was it squadron size. Did he meet up with cover, was that standard? How did he support his organization? Was it controlled by ground controllers? Those kind of questions. Neil can you go ahead and start that off there and that will open it up.

ANSWER:

He would usually go out alone. He would start early. He'd be the first one out to reconnoiter the area. When the report was that there would only be ten tanks, that they were looking for ten to 15, then he would be followed up with a very small flight of usually about 12, sometimes only six or seven of those aircraft. He added that he would fly with a squadron size (unintelligible), a normal squadron was 12 to 16 aircraft, but because of the maintainance difficulties and so forth, they could only put six or seven up in the air. If there was a stronger enemy formation of artillery and tanks and so forth, instead of flying a squadron level, they would fly at a group level. Theoretically 27 aircraft, in reality, 15 aircraft. Again they would fly in a (unintelligible)

QUESTION:

What sort of *Liaison* did they have with the top cover? The fighter aircraft, were there prior rendezvous arrangements or was the cover against the Soviet opposition?

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ANSWER:

I'll answer his question, but just to clear up any confusion, I'll run through the...

QUESTION:

I want to know why you laughed.

ANSWER:

Because he said that their communications, normally were telephonic landlines that functioned part of the time and functioned part of the time not. So, that was one of their problems. The levels at which they would work, would be (unintelligible) squadrons; smaller than our squadrons, maybe 12-16 aircraft. From there, you would go to a *Gruppe* which was three squadrons plus a staff flight. From there you would go to a *Geschwader* which was three *Gruppen*. From there, you would go to a *Luftdivision* or a *Luftkorps*, which would be an air division or Air Corps. From there, to a *Luftflotte* which would be an air fleet, (it would be just the level of command). In Col. Rudel's case, his wing would be subordinated to an Air Corps, through land lines would coordinate with close air support units like Col. Rudel's and with fighter units. They would set a rendezvous point and they would supposedly meet their air cover prior to going into attacking their targets. In practice, Col. Rudel's support aircraft would arrive only about one-half of the time. There would be different excuses; they would say they were attacked in route, they were engaged elsewhere, the weather was too bad and so forth. In Russia



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the airfields were so muddy sometimes, that they couldn't take off.

QUESTION:

With regard to the General's question. What sort of large mass armored forces (unintelligible) some said when he got into a situation when there was a mixed battle between the Soviets and the Germans it was difficult to discern.

ANSWER:

Normally, between 15 and 20 was what they were facing. (Tanks) But in a very large conflict when they were concentrated, there would be between three and four hundred tanks.

QUESTION:

Which would be equal to...he's speaking now of what you would actually see or encounter on a sortie? I'm talking about what was inside his area of responsibility.

ANSWER:

What he'd have to do, would be to fly very close to the ground to the figure of two meters, in order to distinguish who was a German and who was a Russian. Often they would be engaged as close as 50 meters from one another and he would fly under to see the form of the German helmet, so that he could distinguish between the ground units. It was extremely difficult the way they would mix themselves on the front lines (unintelligible). They would really intermix. The Germans would be at one place, the Russians may be back behind the

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German line at one point, and the Germans into the Russians line at another point. It was an extremely difficult problem for him to discern which were friendly and which were enemy, and, of course, that was the big thing that occupied his time. It was very difficult, especially when they were receiving *Flak*, because the positions on the ground were so close and the tendency would be to...if they're flying around up there and they start getting shot at they'd say, "Well, we're getting shot at so obviously those are not Germans. In reality, it wasn't the case because the troops were so intermixed, so interwoven with one another on the ground. He said that he had to sometimes make as many as five or six passes for identification alone (unintelligible).

QUESTION:

Were there cases of complaints of inexperienced *Stuka* pilots shooting up firendly, as happened to us, was that a constant problem or...?

ANSWER:

This, of course, occurred, but one did not see it very often. It happened to Col. Rudel on one occasion. It was the regulation in his wing that none of the pilots in his wing could drop ordnance any closer than he, himself, personally did. He also said that he controlled when they bombed at all, so the last decision before bombing was hit.

QUESTION:

I was thinking in particular, if the case of using the

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*Stuka* "G" with the 37 mm, whether there were cases where inexperienced pilots actually shot up individual German armored fighting units? Germans because of misidentification, stress, whatever.

ANSWER:

It happened to Col. Rudel personally. Fortunately the bomb missed, and the guy jumped out of the tank and waved at him. It was a Tiger (tank) and the guy, very shocked and frightened, popped open the hatch and waved at him.

QUESTION:

Let's pursue that a little further then...did they ever have any ground control or ground assistance in target identification, and what marking devices would be used?

ANSWER:

He said that in the Panzer divisions, which you have to remember were elite divisions, they had *Luftwaffe* Officers who were on the ground, in tanks, with radios. They were in very close communication. There is probably a better way to introduce this subject. The 14th Panzer Division had one Panzer left at the time of this incident and the commanding general of the unit told Col. Rudel that he was going to use that tank as a radio tank. Put in his *Luftwaffe* Liaison officer. He took the cannons out in order to get the radios in. He said that the conversation, the exchange, was far more important to him than whether that one Panzer could shoot or not. The *Stukas* gave him the possibility of attacking

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targets that he needed attacked and obviously with vastly greater fire power than that one tank could give him. That introduces the importance of this liaison. But the fact that there were *Luftwaffe* Liaison officers mounted in special tanks, had radios that were on the air-to-ground frequency of the JU-87 and they were in constant, very close, contact. They announced what they needed done, what targets they needed, if they could pinpoint them, they would pinpoint them, if they only knew they were taking fire from a certain area, they would ask them to search for them. So they were in very close tactical contact. Col. Rudel says that if they had not had that kind of arrangement, the war would have been over in 1943. That's how critical it was to the overall success of this close support effort.

QUESTION:

Down to what level were these patrol units, did he tell you? How many?

ANSWER:

There was one per division, so that would be division level liaison.

QUESTION:

(Unintelligible) Movement around the battle field is terribly confusing and diverse, it seems to me that they obviously couldn't be everywhere at once.

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ANSWER:

You've got to remember that, these were small divisions. They were more like our brigades. Somewhere between our brigade level and division level.

This was, of course, up to the division commander (where to put the *Luptwaaffe* Liaison Officer), but he was normally to be found all the way up front with the spearhead of the armored division and that was just the assistance they gave the division commanders.

NEW VOICE:

You know, through, Pete, Tom, it seems to me, that when you have friendly versus enemy, you get into a large mass of tank battles, the thing that (unintelligible) is going to be very murky (unintelligible).

People is the wrong word.

It is going to be difficult, in fact, if there was some kind of marking capability to keep track of what's out there...

That's why it is to important to train the force before the battle starts.

So what?

So important to train the force before you get in that situation.

Yeah.

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ANSWER:

In addition to the Panzer divisions, there were liaison officers with 20 other elite groups. The (unintelligible) were not organic to the division because there were not enough of them to go around. In fact, they were only assigned to divisions that were right in the thick of it. Any division that was off the line or just holding or something, they pulled the *Luftwaffe* Liaison Officer and assigned him to the replacement division.

QUESTION:

What was the line of authority? Did these liaison officers have the authority to direct aircraft? What was their authority?

ANSWER:

Now just one minute, first answer the previous question.

Yes, we have a previous question that has not been translated.

And the question was about whether or not you used pilots as these forward controllers or liaison officers.

ANSWER:

No, there were no pilots that were used. They were *Luftwaffe* Officers, who had special training, one year schooling for this particular chore that they were doing.

They were mostly used just as liaison officers. They did not have any command authority or anything. They would inform the air units how the divisions were deployed on the

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battlefield, where they were, where the friendly troops were, and where they suspected the enemies were. He didn't have any command authority. The organization chart would have the Flieger Air Division or Air Corps as Col. Rudel's commander, and he was theoretically responsible to him. However, because of his experience, innovation and previous employment, he in effect had a free hand with operations... that was given to other experienced leaders also, but only very experienced ones.

They would be sent from one area to another as the need arose and that would come from higher authority. But as far as employment within his area, the authority to release his bombs, was left to him because of his experience and his prior success. He knew more than his commanders knew and they recognized it and said in effect, you fact a free hand in what you are doing.

Start out with the question. What was the question?

The question was, did other commanders, were they held responsible to the higher echelon of the command, the Air Divisions and Air Corps?

ANSWER:

Col. Rudel said that there were a few of course, if the commander of the individual wing or group was a new commander, then the control that the Air Division commander would exercise would, of course, be much more stringent than he would with someone like Col. Rudel. However, because of the

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core of experienced people that they had available for commanders, by the end of the war there were very, very few wing commanders that had to be subordinated to the Air Corps commander, in that manner.

For the inexperienced squadron leaders (unintelligible), the Flieger Corps level, the Air Corps level told them exactly where to bomb or gave them exact coordinates and they had to bomb there. They had no freedom of action, for the inexperienced people, and they bombed there even if there were friendly troops right at those coordinates.

Col. Rudel came back from a mission and he said that they had not destroyed all of the Russian tanks or troops in a particular area and he wanted to return to that particular target to finish up, if there was a conflict between what he thought and what the Air Corps commander thought that the Air Corps commander had a more important target, the, of course, Col. Rudel was ordered to the more important target.

QUESTION:

I'd like to ask him a two part question. Could he give us a brief description of how he reacted to an air request, where did it come from and how did it actually get to him. In reading his book, I see that some of his missions were almost on his own initiative. He went out sort of hunting as against reacting to a request as we would to our own tactical air control system. What was in those areas that were



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within the range of friendly units, did he ever have coordination with the artillery that helped him soften up the area, so to speak, in suppression? Did he ever use the artillery?

ANSWER:

It would be the front division commanders that would place their requests and many times the army requests would be 20 to 30 at a time. Of course, this would far exceed the assets that they had...

END OF TAPE I SIDE II

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The final decision on who would receive the help was made by the Air Corps. It apparently was neither a joint conference of division commanders nor higher than Air Corps. The last decision, after receiving the requests and the reasons from the division commanders, was made at the Air Corps level on who would actually receive the help.

QUESTION:

Yes, you said something (unintelligible) conversation (unintelligible). You said that even though there were (unintelligible) of those who were issuing the orders and executing that mission (unintelligible) tactical battle, wouldn't there be some process of updating (unintelligible).

ANSWER:

It was clear that a German pilot, group commander, squadron commander, whatever, wouldn't knowingly attack German troops. I think what he meant before was that if there was some friendlies you couldn't see on the ground, they were ordered to attack there and naturally they would.

There was, theoretically, a system of update, but it was so complicated and fluid there, that it seldom functioned. It was dependent upon how far away they were from the controls. how far away they were from

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their own bases, from the Corps. If they were 300 kilometers from the Air Corps, their radios could not function at that distance, so it had to be strictly at the knowledge of the flight commander as to whether or not they would attack. He said that the German soldiers on the ground..., it was seldom that they would have trouble discerning which were their own soldiers, in that situation, because of the *Flak*, other than, as we said before, when they were mixing in one with another. But, normally the *Flak* was so intense that they..., an inexperienced man would say that that is the place that normally they (unintelligible) that there was not a great difficulty telling which were the friendlies and not. The German friendly soldiers would have a flare signal they would use, so that they could identify themselves. If the *Stukas* were to fly over and there was no signal, they would circle again. Knowing the circle, their own troops would use the flare signal to say "we're German, and don't bomb us."

QUESTION:

I'd like to go back to his flight control. He indicated that the first shot out of the barrel in the daytime was his. Look at the situation and then quite often it wound up with additional airplanes in the flights. Could you get the command and control that he exercised over his supporting air that was directly in support of

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him on a mission?

ANSWER:

Yes sir. Could I just hold on it one second to answer the previous question..... the artillery.... about, well that also, I meant about the identification of the ground troops. They would fly down, of course, and make these I.D. passes and then when the troops on the ground realized that they were trying to clarify the situation they would use flares, flare pistols to clarify their position. Then, from above, Col. Rudel could look down and he could see all the lights and maybe he could make out exactly where the front was. They would use different colors for different purposes and he would know exactly along what line the friendlies and the enemies....,

And even apparently inexperienced commanders would normally be warned off if they were about to bomb on some coordinates that were four hours old and the friendly troops had advanced too, meanwhile. Even an inexperienced commander normally, if they were shooting off very pistols, would see that he wasn't supposed to bomb there. If he wasn't too rigid, then apparently they would let him move his coordinates forward, bomb forward. Apparently, that was an informal arrangement, strictly speaking he was supposed to bomb the coordinates. But,

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apparently the system was flexible enough to allow him to shift his coordinates forward.

The remark that you made about giving away positions, sir, by the lighting and by flares; he (col. Rudel) said that the Germans were concerned about having friendly bombs dropped on them and they would constantly light their own positions to avoid this situation. There was no such thing as a secret as to where they were. The Germans always knew where the Russian soldiers were and the Russians always knew where the German soldiers were. So, it was not a problem of giving away their positions... it was already known. It was more important to them and to their own safety that they identify themselves, which they would do constantly, with the *Stukas* so that they would not get their own bombs.

To answer your question about the artillery: The artillery was used only for spotting. They'd drop a shell (unintelligible). They wouldn't be used to soften up an area or to try to destroy some of the Russian units...  
.... suppression?

The artillery didn't have enough munitions to waste them that way. Not that they'd be wasted, but there were other targets of higher priority that they...,

You see, they were operating on a completely different tonnage scale than the U. S. divisions. A U.S. division got such higher artillery tonnages that they could afford

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to do that type of thing. There was very little mass artillery anywhere on the Russian front, because they were so tight on artillery. Our idea of artillery preparation, by the Germans was relatively rare.

CHAIRMAN:

I think we can take a break now. I propose, it's quarter to twelve right now, that we take a fifteen minute break, return at 12:00, go for another hour and then at 1:00 we'll adjourn for lunch.

This paper, that's hopefully going around; if you would, I would really like you all to sign up with your address and when we have something that resembles minutes out of this, we'll send them to you for your information. It's started out, it hasn't gone too far. So, if each of you would please sign we'll try to take care of that administrative detail.

(AFTER BREAK) (MR. TURNER)

Can I make a point? The comment that I made about the journalist; He is a journalist by background but this report is strictly for internal use and not for the press, for anybody who may be misled by that comment.

QUESTION:

Internal to what? Explain internal!

ANSWER:

To this group.

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QUESTION

He's making this tape so that this group can hear it?

ANSWER:

No, so that we can put one report together, that's not biased.

QUESTION:

That's an internal tape?

ANSWER:

Yes.

QUESTION:

Controlled by you?

ANSWER:

Correct.

QUESTION:

That's going to be used to cross check the minutes.

ANSWER:

That's correct.

CHAIRMAN:

Specifically, we want to avoid any kind of an implication that sounds like,... and that was the ground rules that Tom and I had talked about. We're going to live by those and we'd like you all to do the same.

Now, we're having lunch at one o'clock and we have reserved spaces for twenty people, it's flexible. For those who wish to sit in at lunch, it will be informal.

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We'll have an hour and a half, of course not all that period will be lunch. We'll readjourn here at 2:30. May I have the hands of those people who would like to have lunch upstairs. Someone count, I'm too dumb.

If someone wishes to join that did not put their hand up, I'm sure there is expansion capability. We specifically went at one so that we wouldn't be going during the noon lunch hour rush.

LUNCHEON INTERMISSION

CHAIRMAN:

O.K., with that we closed with the question of signalling and controls that were used at the front by the pilots. Shall we continue in the command and control sense for a period. Raise your hands, and we'll start the questions still in the command and control area.

QUESTION:

Why don't we pursue the one that we had just before lunch. As we were closing Col. Rudel made a few comments that I think were very interesting and that underlines probably the most fundamental points concerning the men at controls. He said that the pilots involved in close support, they must think of themselves as soldiers...if they don't think of themselves as soldiers, then none of the other arrangements can work. The whole thing evolves around that. He said that if they think of themselves as purely pilots



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or as fighter pilots, it is not possible to do this mission. To do close support, the pilots have to be, in his term, infantry of the air.

QUESTION:

How did Col. Rudel manage the air that was supporting him? He indicated that quite often the first flight of the day was the personal reconnaissance of the area and then subsequently air power was applied. Did he hold them from the fields? Did he marshal them so far from where he was? How did he call it in? Is he a (unintelligible)?

ANSWER:

The first part of that question was that he would go out first, then return to the base, because the other pilots would sleep longer than he would. This was a before dawn flight. It was a reconnaissance flight before dawn. He would return and the other pilots would then be ready (having gotten up later than he did) and they would take off, usually in group strength, which was, as we have said before, about 14 or 15 airplanes. Then he would take them back to the area that he had selected and presumably brief the Air Corps level what was to attack. That would start off the fighting day. With his normal aircraft strength being 36, he would only be able to put 14-15 aircraft in the air and ready for flight.

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QUESTION:

Was the reason for this battle damage, or was this one of their maintenance problems?

ANSWER:

The main reason for that was mechanical. Their problems were because an aircraft is a very technical machine and in order to maintain that aircraft properly, they could only get about 1/3 of them in the air. It was less the problem that they had been shot at.

Half of the aircraft were severely battle damaged. He has located them... In theory he had 36 airplanes available, 27 on strength and 9 reserve. The reserves were always intended to be in maintenance. In fact, he was able to only put up 14 or 15, normally. Of course, there were days when he'd go alone; there was only one airplane available.

He says it was not so much a problem of resupply, because they got pretty good resupply by air with the JU-52 tri-motor, up to and including engines. But, he said that the battle damage system was a serious problem.

QUESTION:

That's the point I want to clarify. Was it the battle damage that was keeping the readiness strength suppressed?

ANSWER:

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He says about half and half. About half would be in battle damage status and about half would be in mechanical difficulty.

QUESTION:

Can we press just a little bit further on this control of his flight. I recognize that there are as many different targets as there are ways to run an air show. But, in general, did he make the first pass and mark it? Did he exercise command of the individual planes in their strikes? How tightly did he hold them or was it a general application and then to go home, reload and come back?

ANSWER:

It depended greatly on whether or not there were other aircraft..., whether there were enemy aircraft in the air coming against them. If, in fact, they had to counter enemy aircraft, then the formation would be very tight and they would go one after another, following Col. Rudel. He would always be the first one in and everyone else would follow him through, in trail, with about 10 feet of separation between them, the aircraft behind him.

The reason for that was that the typical enemy fighter tactics that they were facing were to try to get in the midst of the group, to catch a straggler or something. If

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they tightened up, they found it was very discouraging to the Russian pilots because the JU-87 had pretty good air-to-air firepower. Normally, if they could hold tight formation, the fighters would never try to break up their formation (unintelligible). Now within that tight grouping they still had individually briefed targets where they rolled in. Every single pilot had a prescribed target, that was given to him by the flight commander. Those could be different. Of course to keep a tight formation, they had to be pretty close, but they would be briefed (unintelligible).

Without a fighter threat it was a much less controlled flight that would go in and, as was already said, they each had a target that was pre-briefed. That could be within a two or three kilometer distance that they would be attacking. He would let his pilots have their individual targets and then after about 10 minutes time he would call for reassembly, they would gather together and then either return or...

QUESTION:

One final question or command control: Once they got airborne how much of the time did they get diverted to a higher priority target and what was the mechanism for doing this?

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ANSWER:

That happened very seldom. They got it over radio, but it was only possible to recall them if they were within 30 or 40 kilometers of the transmitter. This was a very seldom occurrence.

One of the reasons they were much less diverse is they were flying so many sorties all day long and they weren't particularly long, they were about an hour a sortie. With flights taking off all day long there was less reason to divert. They pulled up to two-hour normal combat missions and the average was about one hour.

First, to answer the first question, the thing with the sortie was the fact of how far away the target was. That was the only criteria. We keep coming back to the resource problem. They didn't go around throwing bombs all over the countryside. They had to have targets that warranted sending the aircraft, the few resources that they had and using the bombs and cannon to attack specific targets. On an average day, however, he would fly five to six sorties, but if it was that necessary for them to fly in order to save ammunition and gas they would just stay on the strip.

That was five or six sorties per ready aircraft. That means if there were 14 or 15 that were normally ready, each of those would fly 5 to 6 sorties per day.

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They would surge and fly more sorties when there was an enemy breakthrough.

The question was asked, what kind of resource allocation would they make to these particular missions. The Germans built about 116,000 planes during the war time period, of which 4,888 were *Stukas*. A small percentage of those *Stukas*, I don't know the exact amount, was the G-model with the gun. In addition to those close air supports there were must a few hundreds of the (*Henschel*) 129. So, in essence, the *Luftwaffe* was not making allocations of resources, it was not truly a close air support air force. They were primarily the air superiority type fighters that they were building or the interdiction kind of aircraft. The two main birds were the FW-190 and the ME-109 and they built over 60,000 of those two birds.

QUESTION:

I hear the British felt that the gun was not satisfactory because of the lack of a good gun sight and the low rate of fire and perhaps the low range, although the outer penetrating quality was there. I believe the Royal Air Force abandoned the gun for the rocket. Was the gun with (unintelligible) in the *Luftwaffe* or was the gun ever abandoned, or was the gun carried to the end or did the rocket come in?

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ANSWER:

Their experience was exactly the opposite. He would take any problem that he had with his aircraft just to have the weapon system that he had on it, to have the cannon that he had on it, because the accuracy and the distance to which he could shoot, was much better and further than was their experience with the rocket. With the rocket, they had a problem with the trajectory at the end, which would bend down and come in at the tank. The aerodynamic control of the rocket was so poor that the stability of the rocket was such that they could not count on the accuracy that he would have in cannon. He said that with his cannon position of the 3.7 he could count on about 1100 meters muzzle velocity whereas with the rocket it was only 700. They did experiments with the FW-190 and they worked quite hard on the rockets. They brought the muzzle velocity up from 115 meters per second to 400 meters per second but it was still hopeless at 400 meters per second. The trajectory for it was just too great to do any good. Even the warhead was quite good, he said, if you could hit you usually got a kill with these bigger rockets but it was just hopeless to hit.

Also, he reports something that I don't think is widely known about his gun. The aircraft cannon is different, apparently, than the ground 3.7 from which

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it was derived and according to him, 1100 meters per second muzzle velocity, whereas, the ground 3.7 had 700. I've always believed this gun had that too, but he says that 1100 meters per second was the velocity. Actually, that makes it a little faster, I think, than the A-10 gun.

QUESTION:

We've been hearing comments here regarding the fact that he was willing to take certain measures on the *Stuka* there relative to modifying weapons to get the kind of weapon that he wanted. The question that I am interested in turning the problem around the other way is: In view of the fact that all of this modification was going on with the *Stuka* in order to have the so-called regimented weapon, were there any other plans to come out with a new airplane with those kind of weapons so they could get a better marriage. If so, what kind of airplane were they thinking about?

ANSWER:

Originally he did not like the *Stuka* because it was not a close air support aircraft, but as they went on he found things that he liked about it. There were no plans that he knew of to create a better aircraft that would be a close air support type aircraft (unintelligible).

QUESTION:

Let me pursue that then while we are on it. Were



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there any recommendations either by himself or other pilots in the *Luftwaffe* to do such a thing?

END SIDE I TAPE II

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QUESTION:

(Unintelligible) Was there any kind of recovery system if they lost a pilot? Could he describe that?

ANSWER:

They always waited until they had information as to the status of the pilot whether he was dead, whether he was breathing, or whether he had been taken prisoner. If it was within 5 to 600 meters in the Russian front, they would land another *Stuka* and pick him up.

QUESTION:

The other question was, when pilots were hit on this type of mission and they sustained damage, was it typical for them to explode in space, or to be able to milk the plane, or to fly long enough to get back into friendly territory normally, or did they normally go down behind Russian lines, behind the FEBA on the Russian side?

ANSWER:

They would land in friendly territory. It would have to be in a prepared field, and then a couple of days later the pilots would show up back in the squadron.

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QUESTION:

Would you explain that answer one more time?

ANSWER:

The pilot would attempt to get the aircraft back over to friendly territory. He would select a landing area so that he could make it back to the field, so that he could land the aircraft and a couple of days later, he said that they would show up back at the squadron unit.

He says that about 50% of the pilots hit were able to make it back to friendly territory and the other 50% were either killed in the air or had to land on the Russian side which was pretty much the same thing, he never saw them again.

QUESTION:

Why don't we talk about the pilots for a little while. Apparently they had a big turnover since they had a high casualty rate. He must have some sort of an idea of what it took to make a pilot. What kind of a guy was a pilot? How long did the guys usually last? What sort of people were around making up the force that was important to him?

ANSWER:

They began flying either the (unintelligible or the unintelligible door to door) then they would graduate to the (unintelligible) 23. The normal flying course lasted a year and a-half to 2 years and after that there

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would be another 6 months of specific *Stuka* training where they would learn bombing and how to shoot the weapons that were attached to the aircraft itself. They would practice flying at 5 to 7 meters formation.

During the height of the war, the initial training was shortened by 1/2 year, but it was immediately apparent that the pilots were not as well trained and they were not as capable as the other pilots.

QUESTION:

(Unintelligible) How many flying hours?

ANSWER:

This would only be an estimate, but he says about 80 hours, that's total. That includes both at the *Stuka* school and (unintelligible).

QUESTION:

That really is a very low flying rate for the period of time.

ANSWER:

The rest of the time, basic training was devoted to such things as infantry training so they had all of the training that a basic soldier would have had, specific training hours in (unintelligible). He doesn't want to be quoted as to saying that (unintelligible).

QUESTION:

It sounds that fairly early on they were selected

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to go to *Stuka* pilots.

ANSWER:

The decision was made after your year to year and a-half time in your (unintelligible). Then Col. Rudel wanted in all instances to be a fighter pilot, but his whole class, his whole year group, was sent to bomber school. He was very distraught about that actually, and on one occasion Marshall Goering came for a visit and he explained that they were just starting out a *Stuka* unit, a dive bomber unit, and asked for volunteers and Col. Rudel volunteered. That's how he became associated with the *Stuka*.

He explains this rather emphatically in his first book, *The Stuka Pilot*...The possibilities for becoming a fighter pilot were so scant for his class, there were rumors going around that they were all going to be bomber pilots and that's the way it was going to be and only the very top of the class, the very top percent would be taken into the fighter pilots and as Marshall Goering had made this impassionate and rather exciting presentation about the *Stukas*, he volunteered with several others. Then, as the class assignment came out, almost everybody got fighter. That was one of his first disappointments.

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NEW VOICE:

Welcome to the military!

QUESTION:

Let me expand on that question and make it more general....than a personal thing. When a normal class would graduate, how would they make the decisions as to who would go fighter, bomber, etc.?

ANSWER:

There wasn't a very large class and it wasn't just what they needed at a particular time but somewhere up in the hierarchy they knew that at any particular moment they were going to have a certain number of fighter pilots and those people, they had tentatively selected so they knew, the students did not.

QUESTION:

He is implying that they were careful not to select the top 10% to be fighter pilots. What he is saying is that they were doing consciously the opposite taking the whole class and sending them all to one kind of airplane unit.

QUESTION:

Mr. Sprey had a question that we maybe should go back to. How did the JU-87G employment differ from the other....I meant the other unit (unintelligible).

Let me expand on that....Col. Rudel's unit was more successful than the other one, this could be attributable

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in any way, differences in training, operations or the difference in Col. Rudel's own expertise...

ANSWER:

It is very similar to anything else in business. He is saying that without having specifically different tactics or a different technique, that is noticeable, that an individual who is successful just brings success to his own organization. These people, just by association, are more successful than some others. I think there is nothing that he can depend on and say it was this. He is quite modest in saying that he is not contributing to himself specifically, but success is what bred them.

I might add that with regard to the number of tanks killed, Col. Rudel had the most with 500. What is sort of suprising is that the number two guy only had 100 then 70, 60, 50. Would you attribute that to tenure in combat?

ANSWER:

He says that the difference between the two units is that his unit had approximately two years in the operation of handling and flying aircraft. His wing had 12 to 20 cannon-firing aircraft and about 900 tanks, 500 (unintelligible). The other squadron that belonged to the other wing got about 200 tanks, now these are rough estimates, he doesn't have the precise figures on that.

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The number two pilot on tank kills was in the war about the same time as he, perhaps six months less time in actual combat. He had the same training that Col. Rudel had, but he did not have the number of sorties. Flying hours weren't any match. The number two man had about six or seven hundred flying hours sorties, whereas of course, Col. Rudel had 2500. He lived in his airplane. That was one of the things that he attributes to the big difference.

QUESTION:

Ask Col. Rudel to comment on the Eastern or Western fronts.

ANSWER:

He said it would have been almost suicide on the Western front. He said it is difficult to imagine that they would have had anywhere near the success. They would have had probably ten times as many losses because there were so many western planes in the sky, they did not have the freedom to fly that he had. They would have not had the opportunity to even find the tanks.

He is not referring to the French pilots at all, just to the British and the American pilots not to say anything derogatory about the French, he was just referring to the British and the American pilots.

He says that in the West, with the British and the

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American pilots, the average pilot was very good whereas he has explained once before, with the Soviet pilots, 90% were very weak pilots and that is one reason that he credits their success in the East.

That is an interesting point because he is not talking about hundreds of airplanes and if he calculated it there might not be much of a difference between...

QUESTION:

That brings up another point. I was under the impression that in late '43 and '44 that we could buy a lot of trouble on the Eastern front. To the Russians...,

ANSWER:

We had all kinds of trouble doing any flying in Russian air space it took us six months to negotiate...,

QUESTION:

Even in his book though he...,

ANSWER:

American airplanes...he says there were American airplanes with Russian pilots. He had an engagement one time with 30 mustangs, American pilots with a flight of 14, I believe it was. That was late in the war when the Eastern front and Western front tended to be just as close to one as the other but he might comment on that...

He said that they just turned inside of them all the time for about 15 minutes after 15 mustangs had fired.



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QUESTION:

I understand that was the only time (unintelligible).

ANSWER:

He did that in order to make the aircraft more (unintelligible). He said he is talking about the air superiority that existed in the West late in the war where there was perhaps a ten to one disparity between fighters on one side. At that point there was just no hope of being left alone to search in peace for tanks. If you didn't have some kind of assurance that you could go out and concentrate on searching for tanks with some kind of cover and reasonable assurance; if you had some flight that couldn't do that, then there was no point in going out. And in fact they did not even take the aircraft out into the West because in fact for that reason, lack of air superiority...

QUESTION:

In attacking armor with the gun there were specific attack parameters, avenues, or options that he taught either the pilots when they arrived on the Eastern front or they were taught at *Stuka* training so that they would always try to achieve a frontal attack or side attack or rear attack on the tanks say for the best probability of kill?

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ANSWER:

With regard to tactics or vulnerable areas of the tank: Before he got the (unintelligible). In order to make his transition to a fully ready combat crew member they would take him on some relatively easy missions where they didn't anticipated any heavy Flak or anything. As such, he would make a gradual transition to the point where he could go on the more demanding missions. They would train them in the school to specifically aim at the drive train area, the motor of the tank and where the munitions in the tank would be stored and that would, of course, be at the right rear or the rear itself. Specifically that is the reason for a kill that they could authenticate too. Those would be the places that would explode. He said that about 90% of their attacks were directly from the rear in to the grill which was the weak spot; into the rear deck of the grill. The other good way to attack was from the side aiming below the turrets to the weaker side armor which was where the (unintelligible) were stored. That made up the other 10% of the attacks. Ninety percent from the rear, 10% to the side.

QUESTION:

Did they ever have any luck at all in frontal, or did he even try?

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ANSWER:

He's talked about the T-34 and the *Stalin I* and *Stalin II*. The *Stalin I* and *II* are heavy tanks with a hell of a lot more armor in it than a T-34. (several people talking unintelligible).

There is one big difference with that speaking of the best vulnerable points now and that is that there was absolutely no option for a sneak attack with the JU87-G. There were only on the deck attacks at perhaps 30 degrees, no more, and perhaps you are talking now about a much wider range of opportunity.

Thirty degrees is pretty steep. We don't get much more than that. He said that the highest that he used to engage in was 20 degrees and, usually, much more often right on the deck at ten degrees to attack because he was always trying for 100 to 200 meters slant range where we are talking about the possibility of 60 degree attacks,

45 degrees maximum...60 degrees wow!

You realize right now, of course, it is probably about 55.

For whatever it was worth, it was our opinion from a small arms standpoint that given a fixed slant range for example 3500 feet, if you held that constant, the steeper you go the better off you'll work but if the steeper you

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went, the more likely it was that you had to move out. I don't think it would equal. So, you come back to where Col. Rudel was, that the best attack of all was low angle, close-in.

QUESTION:

Using that as a given, and you mention training, how much of your training was devoted to low level, and what was that low level?

ANSWER:

You mean in actual flight...right,...

You mean the training the pilot would get after he was posted to the operational unit?

During the Stuka training, how much time did he get at the actual low...prior to going into combat.

The standard training for the least parameters for the "G" cannon firing aircraft was 20 to 25 degrees and 400 meters to 600 meters. He would wind up not much more than 50 meters off the ground.

QUESTION:

Let me get back to the (unintelligible) let me ask Col. Rudel what he would like to have had.

ANSWER:

Twenty or 30 is what he would have liked to have had in each cannon (unintelligible).

When they had a take off location, not necessarily

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in the field, but if they had a location ten to 20 kilometers from the front, then he could spend 25-minutes or more in the target area and for that reason his six shots were not that bad. He could return without wasting a great deal of time. If their take off location was back such a distance that it required 25 to 30-minutes to get into the target area, then he only had 15-minutes that he could spend in the target area and that would be the time he had to work a little harder.

Many of their air fields were 200 and 250 kilometers away from the front and at that type of distance it would take him two to two and a-half hours to fly to the target area and then he would only have about ten minutes in the target area.

QUESTION:

Just to carry this a little bit further,...is there a limitation within the pilot; say I was given an area of a very high threat (unintelligible) the average pilot could fly before he (unintelligible).

ANSWER:

He says that (unintelligible). They've had pilots that were wiped out after two or three sorties (unintelligible). But normally they wouldn't take that kind of mission except that they had an adequate number that could make five or six missions pretty well and he said

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that there was a pretty small number he felt that could make ten sorties.

QUESTION:

(Unintelligible)

ANSWER:

No, that is way above average. He is saying that they had very few pilots that could go above ten. Of course we're talking about (unintelligible) averages.

No, this is of course the defenses he is talking about and remember they are higher than any defenses in (unintelligible) and certainly higher than in South Vietnam and much higher than most of the world.

END TAPE II SIDE II

TAPE III SIDE I

QUESTION;

I've got a number of sub-questions related to visibility. It has to do with how it affected Col. Rudel's operations, what he would have thought the minimum visibility for operations was, and finally what effect low visibilities had from the point of view of enemy air getting in on the *Stukas*.

What kind of visibility are you talking about?

Air-ground visibility. Is it a mile, a mile and a half, two miles, this kind of thing.

ANSWER:

To answer the first part of the question about weather minimums, the weather minimums for the regular *Stuka* were lower than those for the cannon aircraft. For the regular *Stuka* the absolute minimum would be 30 meters ceiling and 300 meters vis. For the cannon aircraft it would be 100 meters ceiling 600 to 700 visibility.

QUESTION:

That was enroute then for combat? What about combat?

ANSWER:

The same.

QUESTION:

What was the visibility on the cannon equipped again?

ANSWER:

100 meters ceiling, 700 meters visibility. (unintelligible) The (unintelligible) wasn't as good as before, when you had bad weather, because, although there was perhaps some element that would preclude the enemy fighters from coming in, the losses to

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Flak were much higher than in normal weather. The fighters didn't fly in that weather, period! However, the losses to Flak overruled any possible advantage they could get by not being attacked by fighters.

QUESTION:

Because the weather forced them lower?

ANSWER:

Well, they had a hundred meter ceiling and on top of that they had difficulty seeing the flashes of the Flak (unintelligible) and the Flak, of course, knew their height from the well-defined cloud ceiling and had that advantage in (unintelligible) on them.

QUESTION:

How many plane losses did you have due to the tank blowing up and you going through the debris?

ANSWER:

Now and then they would pick up some frag from a tank that had exploded but no Stuka was lost due to picking up frag from an exploding tank.

QUESTION:

What sort of tactics did he use when he was searching at very low altitudes, and found one? How did he convert into making an attack?

ANSWER:

He would orient himself towards the tank and look to see which was the rear end of it. Then immediately position himself so as to attack that quadrant from the rear.



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QUESTION:

What would he do then, gain altitude and dive or just make (unintelligible)?

ANSWER:

His tactic, and one of the things contributing to his success, was to always come in on a very jinking maneuver. As he explains it, almost like a drunken man, coming in to his tank and when he had his tank in sight, he would level off to come in with only one second of leveling off. That was the key to his success. So many of the others had a long profile, where they would come in, straight and level, lining up on the tank. But he only used one second, a second and a half at the longest, other than that he was jinking back and forth, but he would not climb. He would go down as far as five or ten meters.

QUESTION:

Which was he most conscious of, shooting or the amount of time (unintelligible). If he were flying at more than a second level would he break off without shooting because he'd get that feeling that it had been long enough?

ANSWER:

(Several people talking--unintelligible)

General, I'll answer your question how he specifically positioned himself. Without regard to the weather restraints, with regard to the small arms and auto weapons fire, he could fly at 800 meters, with light Flak he would fly at from 1200 to 1400 meters. He would fly over the tank and make what he considered

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a large turn and would be climbing at the same time to reposition himself to attack the tank. He always had to watch out for the airspeed at 320 kilometers, otherwise he would have oscillations and he wouldn't have a steady platform. Then he would immediately make this large turn and he would roll in for attack. (Unintelligible)

Your question of whether it was more important to him to shoot accurately or to be only a second in his level flight. He said he only spent a second or so at level flight and it was not a question of it being a trade off of accuracy and level flight because he was always accurate. His further comment on that is that he always flew the aircraft, the aircraft was never flying him, the aircraft always did precisely what he wanted it to do so there was never a question of him being inaccurate because he was in complete control. So a second was all he needed and there was no (unintelligible).

QUESTION:

(unintelligible) accuracy?

ANSWER:

That is opposed to what he said about some of the newer pilots. I suppose that it is universal that one tends to let the aircraft fly him instead of him flying the aircraft.

CHAIRMAN:

We are down to a couple of minutes and General Brill wanted to ask one last question.

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QUESTION:

Colonel Rudel has had a chance to see the A-10, I wonder what his comments would be as to the design, performance (unintelligible)

ANSWER:

He said that the first thing that he saw was that the airplane, the A-10, had the performance that he had always wished for when they were flying in Russia. They wanted the option to fly at the speeds that they were going or to fly at 500 or 600 knots, I mean 500 or 600 kilometers per hour. They were very far from having that option. The first thing that excited him when he saw this airplane was that it had what they had always wanted for and was beyond what they could get.

He has already told you about how they started using FW-190's because of the better speed and of the sacrifice that they made when they went to the 190's. Here he sees the possibilities of keeping the dive, the performance and still having that speed that they wanted back then and that he thinks it is a tremendous thing.

Most important he says is not to sacrifice that slow speed. He says that it is great that they have that fast speed and they all wanted it but under no circumstances should you sacrifice that slow speed. You won't find the tanks any other way.

QUESTION:

What about the size?

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ANSWER:

He would like very much to see a second seat in the A-10 for many reasons. One that he will repeat many times is the fact that the pilot, when he is attacking, when he is looking for a tank, must spend 100% of his time looking for that tank. If he must spend time looking in the rear to defend himself, or to separate himself from the other aircraft, but most importantly to defend himself from attacking aircraft, he does not have the concentration on the attack area and on the target. He will not be able to find the tanks, which is the most important thing to begin with. Having a second individual in the aircraft itself has many secondary benefits, one of which is the fact that the gunner, as he is describing it, can also help spot. It is a second pair of eyes that can say, "I can see him now," "turn at this point" or "there is somebody behind us you have got to get out of the area" "you have to change what you are doing now." The other thing is, and especially in his instance is that the second individual was a control, offering immediate refutation, if you will, or confirmation of the kill. Confirmation of the fact that you have stopped a particular tank. Secondary reason as to why it would be nice to have a second individual is the comradeship that there would be moral support. If you are concentrating so on what you are doing, it assists the pilot so much to have somebody else in there to share his experience with him.

Another thing extremely important, he believes, is to have

TAPE III SIDE I

a second individual to be a gunner with a weapon that he can use against attacking aircraft. For several reasons that weapon must be one that is a very fast shooting weapon that can put a lot of ammunition in the air at the same time. Specifically they discovered that attacking fighter pilots when they found that the *Stuka* had its own self defense and was shooting at them from the rear, became very hesitant to attack that aircraft and of course that gives them the safety and also more peace, if you will, or quiteness to look for their target.

One other thing, Col. Rudel spoke of control. What he meant by this is by having a back seater there, it could dampen an over enthusiastic pilot's B.D.A. He would act as a checker or whatever. The teamwork actually strenghtens the pilots pressing in.

QUESTION:

I'd like to ask, as I think many other people would, are Col. Rudel's remarks about the A-10 attributable to him?

ANSWER:

Col. Rudel says that in spite of the technology in aircraft, he found in his experience that most important, was the spirit and the elan and the dedication of individual crew members. He is of the opinion that the next confrontation, the next war we have, will determine whether the world will be dominated by the Bolsheviks or by the free countries of the West. He is of the opinion that the cruciality of this conflict has to permeate the spirit of all of the individual soldiers that

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are going to be involved in battle.

CHAIRMAN:

On behalf of all of these gentlemen that shared time this morning and this afternoon I wish to thank you. We have certainly enjoyed it I know that we have learned a lot and have much to think about.

COLONEL RUDEL:

Thank you very much for all. I hope I can help you a little with my experience. It is about 30 years ago, but a little can perhaps help you.

END TAPE III, SIDE I

PART II

ORIGINAL GERMAN QUESTIONS AND ANSWERS

WITH ENGLISH TRANSLATIONS

**PART II TRANSLATORS**

**Capt. L. O. Ratley III**  
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TAPE I SIDE I

005-664 English language text spoken by the narrator, Col. Dilger followed by Cpt. Ratley, who is giving an overview summation relative to World War Two. This is followed by additional statements from the narrator.

665-670 First question from the floor presented to Col. Rudel in English.

QUESTION:

Colonel, in addition to the tanks you shot at, did you keep a record of the trucks or artillery pieces, or other vehicles accompanying the tanks, or did you not even bother to shoot at them?

670-680 Translation of above question presented to Col. Rudel by Cpt. Ratley in the German language. It is not readable at all (Speaker is too far removed from microphone)

680-695 Co. Rudel begins his first response to question presented by Cpt. Ratley.

*Das ist genau notiert worden, weiss ich, aber...*

*300 Lastwagen zerstört, 80 Flakbatterien, Geschützbatterien, das wurde genau notiert. Das steht leider alles im Flugbuch, das mir von Ihren Landsleuten gestohlen wurde, da steht's vom Flug 1 - 2530 alles haarscharf drin, und es kann den Leuten nichts nutzen. Ich suche es, ich suche es.*

696-704 Translation and discussion of above statements into English follows by English language speaker.

TRANSLATION:

That has been accurately recorded, I know, but... 300 trucks destroyed, 80 anti-aircraft batteries, artillery batteries, all that has been accurately recorded. Unfortunately all that is listed in the flight book which was taken from me by your country man, in it is exactly recorded everything from flight 1 through 2530, and it (the flight book) cannot be of any use to (your) people. I am searching for it...

703-704 Col. Rudel states:

*Am 9. Mai 1945 (wurde das Buch gestohlen).*

TRANSLATION:

On 9 May 1945 the book was stolen,

704-732 Continuation of translation, interjections and additional questions from the floor (the translations seem exceptionally accurate).

732-742 Question (unintelligible)

743-757 Response by Col. Rudel:

*"Ich habe normale Weise... (unintelligible)*

*Ich habe mir die meistens auf 200 m ... 400 m...*

*(unintelligible) auf 5 cm oder 10 cm genau-*

*estens... Also meistens habe ich ja auf 150*

*oder 100 m, wenn es weit war, habe ich auf*

*300 m geschossen.*

758-764 Translation into English:

I have normally ... (unintelligible)... I have them mostly

up to 200 m...400 m (unintelligible) up to 5 cm or 10 cm

precisely... but usually I have fired from a range of 150 or 100 m, and if it was far then 300 m.

764-773 Col. Rudel speaking:

*Ich musste ganz genau schießen... (unintelligible)  
oder den Betriebsstoff, und darum musste ich auf  
10 cm...*

TRANSLATION:

I had to fire (shoot) very accurately... (unintelligible)  
the fuel, and therefore I had to at 10 cm.

773-780 Translator interprets:

He had to be very exact, he had to hit the tank...

780-785 Col. Rudel: words (unintelligible)

785-801 Conversation in English follows, followed by a  
question in German, addressed to Col. Rudel.

801-823 Col. Rudel's answer:

*Unangenehm, in Bezug auf... aber die Germans  
haben ganz leicht ... aber unangenehm war das  
Ding schon. Wenn die Panzer weit durchgebrochen  
waren, führen wir sehr oft ohne Flakschutz oder  
die Flak kamen (unintelligible) Das haben wir  
dann... in Kauf genommen, aber wenn die Fronten  
sich verhartet haben, stand die Flak genau  
neben den Panzern, und dann habe ich mit den  
Kanonenmaschinen, habe ich zu gleicher Zeit  
(unintelligible)*

TRANSLATION:

Unpleasant in regard to... or the Germans have quite easily

but the thing was unpleasant. When the tanks had broken through (penetrated deeply) we very frequently flew without anti-aircraft protection or the anti-aircraft batteries came (unintelligible) protection or the anti-aircraft batteries came (unintelligible) That we have then...taken into consideration (readily excepted), but when the front lines offered stronger resistance, the anti-aircraft batteries stood right next to the tanks, and then I have with the cannon-machines, I have simultaneously (unintelligible) 823-851 English translation follows.

851-862 Words by Col. Rudel:

(unintelligible) ...normalen...Stuka...Flak...  
durch Spezialstaffel

TRANSLATION:

...normal...Stuka...Flak...through special squadron

Words by translator:

*War ein Geschwader...*

Was a squadron

Col. Rudel:

*...bei Stuka 77...*

*... in Stuka 77...*

863-934 English translation follow mixed with exchanges between Col. Rudel and Cpt. Ratley, followed by more translations by Cpt. Ratley, and followed by more exchanges between Rudel and the Captain, mostly unintelligible.

934-941 Col. Rudel responding:

*Da sind wir zwischen 800 und 1500 m. gekreist bis wir den Panzer überhaupt gekunden haben. Das Pro-*

blem war nicht die Panzer abzuschießen, sondern die Panzer zu finden. Wir haben mal über 15-20 Minuten gekreist, bis wir überhaupt die gesehen haben, darum ist eine schnelle Maschine Gift.

TRANSLATION:

Then we circled at between 800 and 1500 m until we had all located (found) the tank. The problem was not to eliminate the tanks, but it was to find them. We have occasionally circled over 15-20 minutes before we were able to sight them, therefore a fast aircraft is poison.

942-956 English translation interspersed with additional remarks by Col. Rudel, and more interpretations...

Rudel remarks:

*Ich selbst flog 250 km, und darum dass wir im Winkel von 20-30 Grad runtergingen, machte es etwa 320 km.*

TRANSLATION:

I flew at the speed of 250 km and because we were descending at an angle of 20-30 degrees, this speed amounted to approximately 320 km.

957-967 More English translations, and again Rudel:

*320-320 km...mehr schnell durfte man auch nicht fliegen, weil sonst die Kanonen Schwingungen ausgesetzt waren. Dann schoss es ungenau. Also 320 km war etwa...*

TRANSLATION:

320-320 km...Faster one was not allowed to fly because other-

the cannons were given to severe vibrations. Then it (the cannon) was firing inaccurately. Consequently 320 km was about...

967-1023 Continued English translations.

Rudel:

*Die Kanonen haben die aerodynamischen Eigenschaften sehr herabgesetzt...*

TRANSLATION:

The cannon considerably reduced the aerodynamic qualities...

Again Rudel speaking, unintelligible, followed by more conversation in English and exchanges with Col. Rudel.

Col. Rudel speaking:

*Wenn man schnell ist in der...und die Wirkung ist ist gleich. Nur ist es schade um den Betriebsstoff und das Geld was Amerika dafür ausgibt.*

and concluded by some English language comments.

TRANSLATION:

If one is quick in the...and the effect is the same. It is only regrettable for the fuel and the money which America is spending for it.

1024-1067 Continued discussion in English and a new question addressed to Col. Rudel in German by the translator.

1067-1088 Response by Rudel:

*Ich habe oft in der Maschine 30-50 ... von der Pistole über Gewehr, Maschinengewehr angefangen  
Wenn keine lebenswichtigen Teile verletzt waren,*

zum Beispiel der Kuhler, dann habe ich nichts gemacht, dann...immer gleich geflickt...auch der Motor hat was vertragen, aber mit Erdbeschuss muss man rechnen.

TRANSLATION:

I have frequently 30-50...in the aircraft...starting with the pistol, to the rifle, machine-gun. If no vital parts were damaged, for example, a radiator, then I did not do anything, then...always quickly repaired...Also the engine did withstand something, but one must anticipate ground fire.

QUESTION TO COL. RUDEL:

*War das ein grosses Problem?*

TRANSLATION:

Was that a considerable problem?

RUDEL RESPONDING:

*Es war nicht schon, aber es existiert.*

TRANSLATION:

And what sort of ground fire was it?

Answer by Rudel:

*Ja, alles, von Pistole angefangen, Pistole, Gewehr, Maschinengewehr, ja mit..., die haben sich auf den Rucken gelegt und haben nach oben geschossen, und wenn das mehrere hundert Leute tun, treffen 10 oder 15.*

TRANSLATION:

Yes, everything, starting with a hand-gun (pistol), rifle,

machine-gun, yes with..., They placed themselves on their backs and fired upwards, and when that is carried out by several hundred men, 10 or 15 will hit.

1088-1098 English translation follows.

END SIDE I TAPE I

TAPE I SIDE I

005-175 Conversation in English between narrator and other parties present.

176-212 Col. Rudel enters into conversation, his voice unintelligible...

Rudel speaking:

*Ich habe das alles mit schlafhandlerischer Sicherheit gemacht... (unintelligible)*

TRANSLATION:

I have done all that with automatic certainty...

Followed by English translation.

213-232 Suggestion by narrator to have a 15 minute break in the conversation.

233-352 Following the break conversation in English continues. The narrator briefs all parties present at the discussion concerning mode of questioning and topics to be discussed.

357-572 First question in German presented to Col. Rudel, (unintelligible)

Response by Col. Rudel:

*Ich bin fruh als erste Maschine gestartet zur Fruhaufklarung. Da bin ich schon geflogen.*



*Meistens.*

TRANSLATION:

I started early as the first aircraft for the purpose of early advance reconnaissance. In such instances I flew alone, usually.

Followed by translation into English.

Col. Rudel speaking:

*Dann kam es auf das Ziel drauf an, wenn nur 10 Panzer gemeldet waren, sind wir nur mit einer Staffel, dass heisst theoretisch 12 Maschinen, praktisch es waren vielleicht nur 6,7 Maschinen, praktisch es waren geflogen, wenn nur 10 bis 12 oder 15 Panzer gemeldet waren.*

TRANSLATION:

Then it depended on the target, if only 10 tanks were reported, we started with only one (1) squadron, which means in theory 12 aircraft, in reality there were possibly only 6-7 aircraft, when only 10 to 12 or 15 tanks were reported.

Followed by English translation.

Rudel again:

*Eine starke Einheit, Artillerie, Panzer, starke Flugzeugverbände gemeldet waren. Starke Einheiten. Dann sind wir mit der Gruppe gestartet, die Gruppe hat theoretisch 25 Maschinen, aber in der Praxis hatten wir vielleicht nur 15 Flugzeuge, dann sind wir mit 15 gestartet.*

TRANSLATION:

A strong unit, artillery, tanks, aircraft formations were reported. Strong units. Then we took off with a group such a group had in theory 25 aircraft, however, in reality we had possibly only 15 aircraft. Then we took off with only 15.

English translation follows.

Next question to Col. Rudel unintelligible.

His answer is:

*Ja, Telefon, das manchmal funktionierte (unintelligible) Wir hatten auch Jager, am Telefon...von den Jagern durchgegeben, dann und dann in der und der Hohe. Aber das hat in 50 von 100 nur geklappt. Dann haben die Jager gesagt, wir sind angegriffen worden, wir sind abgedrängt worden, oder wir sind aus dem Platz nicht rausgekommen, weil sie verschlammte Platze hatten. Nur wie gesagt in 50 von 100 hat es geklappt.*

TRANSLATION:

Yes, phone, which was sometimes operable (unintelligible) We also had fighter planes on the telephone...transmitted to us by the fighter planes, at such and such time, and at such and such altitude. But that worked out satisfactorily in only 50 of 100 instances. Then the fighter planes reported, we have been attacked, we have been forced away (forced to turn off), or we didn't have the starting

field at all, because they had completely muddied landing strips. So, as I have stated, in only 50 from 100 instances did it work well. (i.e. as briefed).

Followed by English translation and detailed elaborations on airforce matters.

Next follows a question in German addressed to Rudel:

*Ach, wir mochten wissen wollen, was fur eine Panzergurppe... Sowjet (unintelligible) Panzer-einheiten, am meisten wie gross waren diese?*

Translation:

15-20 tanks, usually, and whenever it was a tank battle, such as near Kharkov and Smolensk, there were from 300-400 tanks.

Question is not clear, the interpreter is too far away.

572-625 Exchanges in English followed by some German words, (unintelligible) followed by a statement by Rudel:

*...bin sechs oder siebenmal ganz tief in zwie Meter Hohe geflogen, un zu sehen, ob das Deutsche oder Russen tief geflogen, und musste die deutschen Stahlhelme sehen, denn die lagen sich funfzig Meter auseinander und waren ganz verschachtelt, da waren hier Deutsche, hier Russen, vorsichtig sein, damit man nicht eigene Truppen... darum habe ich es ganz im Tiefflug uberflogen... Wo sind Deutsche und wo sind Russen?*

TRANSLATION:

...have flown very low six or seven times at two meters al-

titude in order to see whether those were Germans or Russians. Five or six or seven times I flew very low, and I had to see the German helmets, because they were only 50 m apart and were completely interspersed, there were Germans here, Russians here, Germans here, and again Germans here, and so we had to be extremely careful, in order that we would not our own troops... Therefore I flew very low over them... Where are Germans, and where are Russians? Very good, very good. ... Followed by more conversation in English, and English translation of the above paragraph.

626-651 Rudel speaking:

*Besonders war es schwierig...ich dachte es waren alles Russen...In Wirklichkeit waren's nur eigene Truppen...*

TRANSLATION:

It was especially difficult...I thought they were all Russians ...In reality they were only our own troops...

At this point it becomes difficult to understand. Something about *Flak* and *uberschossen* -- overshoot -- but subsequent English translation has meaning and seems to be correct (See Part I).

652-700 Question:

*Ist es oft passiert, dass Nahkampfflieger deutsche Soldaten getotet haben?*

TRANSLATION:

Has it happened frequently that Close-Air-Support pilots killed German soldiers? (Germans killing Germans by mistake)

Rudel speaking:

*Nein, es ist nicht oft passiert, aber es ist passiert.*

TRANSLATION:

No, it did not happen often, but it did happen.

QUESTION:

*Waren Sie meistens in Gräben...?*

Were they mostly in trenches ...?

Answer here very barely audible - but translation good. Next question difficult to understand. The German speakers are too far removed from the microphone.

700 END OF TAPE I

The next question addressed to Col. Rudel is not clear enough. Something about the Tiger-tank, opening of the hatch... and the guy waving at Rudel.

The question directed to Col. Rudel by the interpreter is not clear.

Col. Rudel:

*...das waren Luftwaffen Offiziere, die der Panzerdivision zugeteilt waren. Die unterhielten sich mit Radio, und sagten mir die und die Widerstände haben wir, oder wir wissen das dort...Und darum ist eine ganz enge Zusammenarbeit zwischen Heer und Luftwaffe selbstverständlich. Und wenn wir nicht eine so gute Zusammenarbeit zwischen Heer und Luftwaffe geplant hatten, dann wäre der Krieg schon 1943 zu Ende. Wir haben uns genau unterhalten und sind eigentlich 140 Panzer haben sollen, und da*

hatten wir Unrein hiess, der hat mir gesagt  
dass der eine Panzer, den nehme ich nicht zum  
Schiessen, sondern da baue ich Radiogeräte ein.  
Das ist mir wichtiger als wenn das ein einstaffahiger  
Panzer war, weil sie mir dann alles erledigen können,  
was ich abschiessen musste...

Die waren an sich nur, ah, bei der Panzerdivision,  
vielleicht 20 Elitedivisionen. Also die waren nicht  
nur an Panzerdivisionen gebunden. Die Panzerdiv.  
hatten sie alle, aber auch 20 Elitediv., dazu gehören  
die SS-Division, Gebirgsjäger und Grossdeutschland,  
zum Beispiel, Wir hatten die Fliegerverbindung mit  
jeder Division.

**TRANSLATION:**

Those were air force officers who were assigned to the tanks-  
division. They conversed by radio and told me that we have  
such and such resistance, or we know that there...And therefore  
a close cooperation between army and air force is a matter of  
course. And if we had not planned such a good cooperation bet-  
ween army and air force then the war would have been over in 1943.  
We have had detailed conversations and have flown over the area  
many times, so that close air contact prevailed... The 14th Tank  
Division had only one tank, should have in reality had 140  
tanks, and then we had from General Unrein, that was his  
name, he told me...that the one tank, I do not take it out  
for combat, but I install into it radio equipment. That is  
more important to me than if it were a combat tank, because

you could then take care of everything for me, what I have to shoot down (the *Luftwaffe*).

Again Rudel:

They were really only with the tank-division (the *Liaison* officers from the *Luftwaffe*) possibly 20 elite divisions, among those the SS-division, mountain-troops division, and *Grossdeutschland*, for example. We maintained radio contact with each division.

Hereafter much English is spoken. Then: *Wo fand man diesen Offizier? War er an der Front--*Where was this officer? Was he at the front?

Rudel answering:

*Ganz vorn mit der vordersten...die schlechteren, noch teilweise Italianer, freiwillige Rumanen, ...Wir hatten diese...auch und dann im ganzen Abschnitt was los war...Wenn nichts los war, wurde der...abgezogen und zu einer Einheit gesetzt, wo...Nein, mein Freund, ah...*

TRANSLATION:

Way out front was the first... the poorer troops, partially Italians, Rumanian volunteers,...we had these...also and then over the entire front what took place... If nothing took place that one was...withdrawn and sent to a unit, where...No, my friend, ah...

Much of this text extremely difficult to understand...

*Das Heer hat bei der Luftwaffe angefragt. Aber es haben 10-20 verschiedene Stellen angefragt, ah...*

ob wir kommen können. Und dann musste die Luftflotte entscheiden und sagen, wir haben nur so und soviel Stukas, wir können nur einmal oder zweimal heute fliegen, und dann wurde entschieden, wohin wir gehen.

Aber Nachfragen sind sehr viele gewesen. Es haben 20-30 Stellen geschrien, bei uns greifen die Russen an. Sie müssen kommen!

**TRANSLATION:**

The army made inquiries, with the air force. But some 10-20 different places (units) were making requests for Close-Air-Support as to whether or not we could come. And then the air-force had to decide and to say, we have only so many aircraft. We can today fly only once or twice, and then it was decided where to we would go. But there were many requests. Some 20-30 units called for help, the Russians are attacking in our sector. You have to come.

New question to Rudel:

*Und was für Stellen waren das, waren das Divisionen?*

**TRANSLATION:**

And what sort of units were those? Were they divisions?

Rudel:

*Meistens... -- Mostly...*

*Fliegerkorps, oder wenn er gute Beziehungen hatte,  
auch*

**TRANSLATION:**

Air Corps, or if he did have good connections, also...

Here follows much laughter and English language conversation.



TAPE II SIDE I

001-076 unintelligible

077-090 Col Rudel:

*Weiter vorn, angegriffen wurde, wo die Russen waren. Wenn er merkte, dass die Deutschen in der Mehrzahl sind wo er angreifen sollte, und ist ein einigermaßen vernünftiger Kommandeur...nicht stur nach den Befehlen ging, dann hat er selbstständig in Russland...*

TRANSLATION:

Further ahead, having been attacked, where the Russians were. If he noticed that the Germans had further advanced, and are in the majority...where he was to attack, and he is a reasonable sensible commander...and not strictly went by military orders, then he attacked in Russia...

091-092 Mr. Sprey, and the Col. Rudel speaking:

092-137 Col. Rudel:

*Aber er hat kein System, wo er neue Nachrichten bekam, er musste das selbst sehen. Theoretisch, wenn er (unintelligible) heute waren wir von der Luftbrücke...vielleicht nur 70 km und das nächste mal waren wir Da nutzte der Befehl der durch das Radio kam nichts mehr, aber normalerweise haben wir so viel Flak bekommen, das es fast unmöglich war, das eigene Truppen waren...auch durch Leuchtzeichen...und wenn wir nicht mit Leuchtzeichen ...dann haben wir noch eine Runde geflogen, dann*

merkten die unten schon: "Wir wissen nicht Bescheid",  
dann haben sie Geschoss...would fire a flare for ident-  
ification), dann Raketen, und dann haben wir genau  
gesehen, aha! das ist die deutsche Front und dort sind

TRANSLATION:

But he had no system where he received new information, he had to see that for himself. Theoretically, if he was not too far away from the air-bridge (Luftbrücke) along the ... (unintelligible). Today we were from the air-bridge...probably only 70 km, and the next time we were 300 km...We couldn't make it with the radio. In that case the order, which was transmitted by radio, was no longer of any use, but normally we received so much *Flak*, that it was almost impossible, that they were friendly troops... Also through flares...and when we did not with flares...than we flew another circle, then they down below (our ground forces) realized already, we are not sufficiently informed (we are lost). Then they fired a flare (they would fire a flare for identification...Then rockets, and then we could see precisely, oh yes! That is the German front and over there are the Russians.

137-261 English

262-280 Translator speaking

281-294 Col. Rudel:

*Die Truppen haben sich kenntlich gemacht durch  
Leuchtzeichen...damit sie keine Bomben auf den  
Kopf kriegen. Dann haben sie überall Leuchtzeichen,  
das haben sie also aus Selbsternst-angst gemacht.*

AD-A160 458

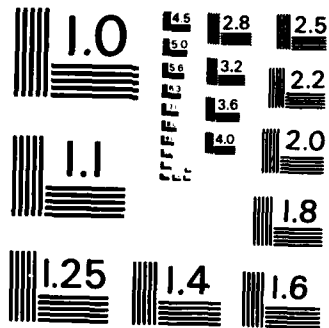
ANTITANK WARFARE SEMINAR HELD IN WASHINGTON DC ON 14-15 2/2  
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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS - 1963 - A

TRANSLATION:

The troops identified themselves through flares...so they would not get hit on the head with bombs. Then they everywhere fired flares, that they did for reasons of self-preservation.

294-295 Question to Rudel by translator:

*Konnten die Russen das nicht bemerken, was Deutsche und nicht Deutsche sind?*

TRANSLATION:

Could the Russians notice that, which were Germans, and which were not?

295-306 Col. Rudel:

*Cielleicht, Vielleicht...aber normalerweise wussten die Russen ganz genau wo die Deutsch und wo Russen...die Deutschen wussten auch genau, wo die Russen sid. Ob sie nur schossen oder nicht, das war egal!*

TRANSLATION:

Possibly, possibly...but normally the Russians knew precisely where the Gemans and where the Russians...the Germans also knew exactly where the Russians were. Whether they were shooting or not, made no difference.

307-375 Translator - English

480-530 English

531-540 (unintelligible)

540-545 Col. Rudel:

*...dann sind sie aufgestanden, dann sind sie tiez*

*geflogen, ... (unintelligible) geflogen...*

TRANSLATION:

*...then they got up, then they flew low, ... (unintelligible)  
flew...*

546-548 English

548-554 Col. Rudel: (unintelligible)

554-560 Col Rudel:

*...meistens nur im Durchschnitt 14-15 Maschinen  
dann (unintelligible)*

TRANSLATION:

*...generally only on the average 14-15 aircraft, then...  
(unintelligible)*

560-585 English

568-613 Translator and Col Rudel (unintelligible)

614-622 Col Rudel:

*Wir hatten alles gebracht, kein Stück (unintelligible)  
Die meisten Maschinen werden unklar sein, nur ein  
beschränkter Teil...*

TRANSLATION:

*We had brought everything, not one piece (unintelligible) most  
aircraft will not be clear for takeoff, only a limited portion.*

623-644 English

645-678 Col. Rudel:

*Die Gruppe hatte (unintelligible) 27 Maschinen und von  
denen waren vielleicht 15 Maschinen klar... (unintelligible)  
Theoretisch... (unintelligible) nur alleine (unintelligible)  
aber dann vielleicht im Laufe des Tages wurden die*

Mach Maschine...aufhalten...

TRANSLATION:

The group had...(unintelligible) 27 aircraft, and of those possibly 15 aircraft were ready for takeoff...(unintelligible). Theoretically ...alone...(unintelligible). Then possibly in the course of the day the aircraft were...caught up...

678-715 English

716-737 Translator (unintelligible)

737-773 Col Rudel:

*Das kam drauf an. auf die Luft...wenn wir Luft... sind wir ganz einer hinter dem anderen, un nicht abgeschossen zu werden, denn die Jager versuchten dann zwischen uns hineinzukommen, dann nahmen sie von uns die Feuerkraft, von den "87" entgegen, und das hatten sie nicht gern. Also wenn starke Jagdaufklärung war, mussten wir ganz dicht einer nach dem anderen sturzen. Ich sturzte als erster, und jeder war ja informiert, wo es hinging. ausserdem wusste er...war das nur...genau gesagt...wenn keine starke Jagdaufklärung war...dann haben wir in grosseren Abstanden jeder sein Ziel angegriffen, das der vorher-gesagt bekommen hat...Du sollst das, und du sollst das...usw.' Das kann sein, dass wir dann veilleicht auf 2-3 km verschieden sturzten. Der eine hier, der andere da...Dann nach 10 Minuten, da gab ich durch: Sammelt euch! Dann schlossen die Maschinen wieder auf und dann flogen wir suruck.*

TRANSLATION:

That depended on the air...if we had air...we flew directly one behind the other, so as not to get shot down, because the fighter bombers tried to penetrate between us, then they took from us fire power of the "87", and that they didn't like. Also when there was intense fighter reconnaissance, we were required to dive closely one behind the other. I would dive first, and everyone of course was naturally informed where he was heading. Aside from that he knew...that was only...precisely stated...when there was not such intense air reconnaissance...then we each of us individually and in larger intervals attacked our targets, of which we were earlier briefed you will do that and you that...etc. It was possible that we then probably dived at different and varying distances of 2-3 km. One here, the other there...Then after about 10 minutes I transmitted the order to reassemble, then the aircraft again closed formations (assembled into formations) and then we flew back home.

774-823 English conversation

823-844 Question: by translator

*Sind Sie einmal...schon... (unintelligible)*

TRANSLATION:

Did you once...already... (unintelligible)

Col. Rudel speaking:

*Das ist ganz selten...*

TRANSLATION:

That happened very seldom...



Question by translator:

*Und wenn es passiert ist, wie haben Sie... (unintelligible)*

TRANSLATION:

And when it happened, how have you... (unintelligible)

Answer by Col. Rudel:

*...Funkspruch, im Schwung durch Funksprecher,  
und der Befehl hat mich nur erreicht, dreissig  
oder vierzig km von der Stelle, die mir das  
durchgegeben hat, ...sonst habe ich es nicht  
mehr bekommen.*

TRANSLATION:

...wireless message, immediately by radio communication, and the order reached me only 30-40 km away from the position (location) which has transmitted to me...otherwise I have no longer received it (the message).

844-881 Followed by English translation, and elaborations to the above, intersperced by additional words from Col Rudel... (unintelligible)

Col Rudel:

*Es fragt sich, ob es dringend war, oder...unser  
Benzin ... wenn es nicht unbedingt erforderlich war,  
sind wir nicht geflogen, aber im Durchschnitt war...  
fünf bis sechs...*

TRANSLATION:

The question was, was it urgent, or...our fuel...if it wasn't absolutely necessary we did not fly, but on the average was... five to six...

881-932 Followed by good English translation and statements by narrator.

933-944 Question addressed to Cpt. Ratley:

I hear the British felt the gun was not satisfactory...

945-989 Cpt. Ratley posing above questions to Col Rudel... (unintelligible) and followed by more talk in English, and intermittent response by Col. Rudel (unintelligible) followed by many English voices.

A question by Rudel:

*Was hatten die Raketen für Rad...?*

TRANSLATION:

What did the rockets have as wheel...?

Followed by more English conversation. Continuous conversation by all parties, mostly unintelligible.

990-1013 Rudel Speaking:

*...Und dann musste man ganz nahe herangehen und dann war die Rakete...einen ganz grossen Bogen, und es war Glückssache, ob man trifft oder nicht. Wenn man traf, dann war der Panzer relativ kaputt, aber wir haben nicht getroffen. Dann ist der grosse Vorteil der Kanone...dass sie eine V-Null von 700 hat. Meine Kanone hat 1100. Dann konnte man Zentimeter genau schiessen, das war der grosse Vorteil, darum habe ich auch alle anderen Nachteile das es irgendsie...alles in Kauf genommen, nur um die Kanone zu kriegen...also die Raketen, das war ein Notbehelf, wir haben längst nicht die Erfolge*

*gehabt, wie wir sie...*

**TRANSLATION:**

...And then we had to go very close up to, and then the rocket was...a very large curve, and it was a matter of good luck, whether one hits or not. If one did make a hit, then the tank relatively speaking destroyed, but we did not hit. Therefore the significant advantage of a cannon...that it had a 'V-Null' (Vo) Muzzle velocity of 1100, while a normal carbine has a 'V-Null' of 700. My cannon had 1100, then one was able to fire accurately within centimeters, that was the significant advantage, therefore I have taken into consideration and accepted another disadvantage, which somehow...only to obtain the cannon. Therefore the rockets, that represented an emergency measure. We by far did not register the successes as we did...

1014-1065 English translation follows given by translator.

1066-1079 Question addressed to Col. Rudel (unintelligible)

Answer by Rudel also partly unintelligible.

Rudel:

*...gar nicht...weil es kein Sturzkampfflugzeug war, ich konnte gar nicht im Steilsturzflug... ich bin nur aus Zwang zu dem Kommando gekommen, ich habe gezwungenermassen, gezwungenermassen.*

**TRANSLATION:**

...not at all...because it was not a dive bomber, I was totally unable to in a steep dive...I only got to this command by force, I had to get accustomed very slowly, but under a measure of outside pressure, under duress.

1080-1104 New question by interpreter, unintelligible, continued exchanges between Rudel and the interpreter...followed by more English language conversation.

Question to Rudel by translator (unintelligible)

1106-1127 Response by Rudel partially unintelligible.

Rudel:

*...Geschwindigkeit ist gut, die anderen sagen, Geschwindigkeit ist schlecht, dasselbe hat bei uns schon stattgefunden. Ich selber, der ein eingefuchster Nahkampfflieger war, der war eben für das langsamere Flugzeug, ob wir 15 km mehr machten, oder 100 km, das machte nichts aus, denn die Jager waren 300-400 oder 500 km schneller, also wenn darunter die anderen Eigenschaften leiden, dann fliege ich lieber mit 250 km, denn es ist bezeichnend für die Leistung...mal abgeschossen, einmal durch zwanzigfache Luftüberlegenheit, nicht durch Jager, nicht durch Jager, wenn sie einen nicht überraschen, kann man, man ist so manövrierfähig, dass die Jagereinheiten nichts...*

TRANSLATION:

*...speed is good, the others are saying that speed is bad, that sort of thing did take place. I myself was an experienced short range fighter pilot, I simply was in favor of a slower aircraft. Whether or not we did make 15 km more, or 100 km, that did not make much difference, because the fighter planes were 300-400, or 500 km faster, consequently, if other characteristics*

(inherent qualities) are suffering here under, then I would rather fly at a speed of 250 km, because it is significant for the results (accomplishments)...one shot down, one through 20 fold air superiority, and not through fighter plane, not through fighter planes, if they do not take one by surprise, one can, one is so manoeuverable that fighter units are unable to...

END TAPE II SIDE I

TAPE II SIDE II

001-041 Question addressed to Col. Rudel not intelligible.  
Answer from Rudel unintelligible.

042-150 Rudel speaking:

*...um zu lernen, haben wir die...23...grosse Maschine...ME-34, die Ausbildung dauerte etwa eineinhalb bis zwei Jahre, und dann haben sie Bomben - und Schies...wert gelegt...  
5-7 m Abstand oder so...dann kamen sie zur...*

TRANSLATION:

...in order to learn, we have the...23...large aircraft..., the training lasted approximately one and a half to two year, and then they have also attended the 'Stuka-School' for six months, there they received bombing and shooting..., placed value... five to seven interval or so...then they got to...

180-215 English translation of the above follows and seems accurate. Then follows discussion in which Col. Rudel takes part.

English translation is good.

215-243 Question to Col. Rudel by interpreter:

*Wieviel Stuka haben die aus der Bereit...*

TRANSLATION:

How many Stukas have they from the prepa...

Rudel speaking:

*In der Stukaschule oder...?*

TRANSLATION:

In the 'Stuka-School' or...?

Followed by English translation.

Question by interpreter:

*Was wir gewohnt sind...?*

TRANSLATION:

What were used?

243-266 English translation good, interspersed with exchanges with Rudel, but not intelligible.

267-282 Rudel speaking:

*Das wollte ich beileibe tun, es war mir so langweilig, (unintelligible) Wer sagte, ja... Stukawache aus ich brauche noch einige Leute, wer meldet sich freiwillig? Da haben sie mir gesagt, Flieger wollte ich werden, ich musste Kampfflieger werden, dann...*

TRANSLATION:

That I absolutely wanted to do, it was so boring to me... (unintelligible). Who said yes... Stuka duty from... I still need several people, who will volunteer? There they told me, I wanted

to become a pilot, I had to become a fighter pilot, then...

283-312 Translation in English by translator is good, and is followed up by more discussion and questioning.

313-353 Question to Co. Rudel by interpreter:

*Als eine normale Klasse zur Prufung gekommen ist,...(unintelligible). Was in dem Moment gebraucht war, oder hat die...grossere...?*

TRANSLATION:

When a normal class came before examination...what was needed at that moment, or has the...larger...?

Col. Rudel answering:

*Es war eine grossere Klasse...*

TRANSLATION:

It was a larger class.

353-370 Question addressed to Rudel:

*Die Frage ist, sind zwie Stuka...wir haben keins gehabt...Wie war es so unterschiedlich, dass ihr ziemlich mehr Erfolg gehabt..., was es auch, wenn die Leute nicht andere Taktik benutzt haben, war es eigene Personlichkeit (Initiative), oder eigene Ausbildung...haben Sie Ihre Piloten anders trainiert als die da waren, was war es, dass man sagen donnte, das hat den Unterschied gemacht?*

TRANSLATION:

The question is, have two Stukas...we had none...how was it so different, that you had quite a bit more success...was it also when your mem did not employ other tactics, was it individual

training...did you train your pilots differently from those which were there, what was it that one could say that or that specific thing made the difference (played a significant role).

370-381 Col. Rudel answering:

*(unintelligible) der eine, ohne was besonderes zu machen hat den Erfolg, und der andere macht das gleiche und hat keinen Erfolg... (unintelligible)*

TRANSLATION:

*(Unintelligible) ...one, without doing anything special gains success, and the other (pilot) does the same thing, and has no success... (unintelligible)*

Interpretor asking additional question, unintelligible.

Rudel speaking:

*Wenn einer einen exponierten...der macht generell nichts anderes als der andere, aber er hat Erfolge...*

TRANSLATION:

If one of them carries out an exposed (visible)...he generally does not do anything different than the others but he is successful...

382-430 Translator speaking, giving good translation of above conversation, followed by more exchanges between Co. Rudel and the interpretor, largely unintelligible.

Additional elaborations by Col. Rudel unintelligible.

431-445 Interpretor translating - very good translation, following is English conversation.

445-450 Question to Colonel Rudel:

*Können Sie in Ihrer Meinung sich das vorstellen*



*und etwas schätzen, was für ein Erfolg...*

*Sie dort hatten?*

**TRANSLATION:**

Can you in your mind picture it...and to approximate something, what kind of success you had there?

450-457 Col. Rudel responding:

*etwas... (unintelligible) an den Panzer ruhig  
herangehen, nur ein ganz... (unintelligible)  
das wäre fast Selbstmord.*

**TRANSLATION:**

...something unintelligible...to approach the tank quietly...  
in order for a complete...that would be nearly suicide.

458-480 Translation very good, additional comments by Col Rudel  
unintelligible, followed by English conversation. Rudel's works  
unintelligible.

*...fast 90%...10%...mit so grossem Erfolg...*

**TRANSLATION:**

...nearly 90 per cent, ... 10 per cent, with such considerable  
success...

English translation good.

481-503 English conversation follows, is joined by Rudel,  
(unintelligible).

Question to Rudel partially unintelligible:

*Es war spät im Krieg, da war das für Deutschland...*

**TRANSLATION:**

It was late in the war, at that point it was for Germany...

Interpreter's question continues, unintelligible.

503-506 Rudel speaking:

*Wir hatten sehr enge... (unintelligible)*

We had very close... (unintelligible) followed by English translation.

507-511 Rudel speaking:

*nach einem... (unintelligible)*

TRANSLATION:

After a... (unintelligible) Followed by English

511-532 Question by translator:

*Meiner Sie, das war das einzige Zeit, als Sie  
Ihre Bomben...?*

TRANSLATION:

Do you mean that was the only time when your bombs...?

Followed by English conversation.

Answer by Rudel Unintelligible...

English conversation continues:

*...he is talking about the air superiority... (unintelligible)*

533-554 English conversation. Translation into German unintelligible. Answer by Col Rudel also unintelligible.

554-575 Translator speaking... Good translation, followed by English conversation, and elaborations over preceding discussions.

575-617 Question to Col. Rudel:

*Wieviel von der Ausbildung...*

TRANSLATION:

How much of the training...

You mean in actual flight?

Colonel Rudel:

*Im Flugzeug selbst, was es sehr...und  
wie hoch war es?*

TRANSLATION:

In the aircraft itself it was very ...and how high was it?

Answer unintelligible, followed by English dialogue.

626-651 Rudel speaking:

*400 m, ...50 m...400 m...400 - 600 m...*

TRANSLATION:

400 meters...50 meters...400 meters...

Interspersed by English words, and additional English conversation continues.

651-653 Question addressed to Rudel:

*Sie hatten gern gehabt, dass Sie 20-30 mal in  
einem Schuss schießen können...?*

TRANSLATION:

You would have liked it very much that you could have fired 20-30 times during one salvo...?

653-686 Rudel answering;

*Das kam drauf an, wie weit wir in...wenn  
wir keinen...wenn wir 10 oder 20 km hinter  
der Front waren...10, 20 mal am Tag, wenn  
ich aber schon eine halbe Stunde Anflug  
hatte, und eine halbe Stunde wieder zurück  
konnte eben höchstens...wenn hinter der Front  
eine Flugplatzmöglichkeit war, oder kein  
Feld, wo wir kein gerades Feld hatten, dann*

wir...zuruck...bis zu...

TRANSLATION:

That depended on how far we were in...if we received no... when we were 10-20 km behind the front lines...10,20 times a day, however, when I had already a half hour approach flight, and a half hour for return flight...it was possible at the most...if there was no landing possibility behind the front, or no field, where we had no level field, then we...back... all the way to...

Translation follows and seems very accurate, followed by Rudel's additional comments, which are largely unintelligible

686-692 Question by translator:

*Meiner Sie dass normale Pilot...gibt es keine gewisse Masse des Heeres erleben konnte, eine gewisse Zeit uber einen schweren ...wo das vielleicht er weniger Geschoss fangen sollte und dann Moglichkeit gibt, zuruckzugehen...?*

TRANSLATION:

You mean that normal pilots...isn't there a certain number (quantity) of the army, to experience, for a specific time over a heavy...where possibly he might receive less fire...and then possibility exists to turn back...?

692-706 English dialogue follows, joined by Rudel:

*Sensibilitat, Sensibilitat...das stimmt, da muss man drauf Rucksicht nehmen, der eine tut es bewusst, der andere war nach 2-3 Einsatzen ziemlich kaputt. Wenn man mir*

*andere...haben wir die nicht mehr fliegen  
lassen, sondern haben die jedoch...*

**TRANSLATION:**

Sensibility, sensibility...that is correct, one must take that into consideration, one might do that consciously, the other pilot was after 2-3 missions quite exhausted. If they gave me other...we did not allow those to fly any longer, but have them...

707-716 English conversation continues.

END TAPE II SIDE II

TAPE III SIDE I

001-120 English conversation continued, with intermittent dialogue between Col. Rudel and the interpreter, largely unintelligible. Both, questions by interpreter and responses by Col. Rudel unintelligible. Continued dialogue in English.

121-150 Question in English:

How many plane losses did you have due to...?

Question of interpreter to Col. Rudel unintelligible

151-188 English translation of the above conversation accurate. Additional exchange of dialogue between interpreter and Col. Rudel to this point unintelligible.

188-215 Col Rudel speaking:

*...zu lange geradeaus fahren, bis...den Panzer genau in Sicht bekommen, während sie so lange anfliegen, wurden sie abgeschossen...wie eine Sache... die Maschinen...und dann trotzdem auf 5 cm und 10 cm genau...und dann habe ich hier abgewinkelt...*

TRANSLATION:

flew straight ahead for too long, until...got the tank precisely in sight, while they approached so long, they were shot down...like a thing...the aircraft...and the none-the-less to 5 cm and 10 cm percisely...and then I have angel of...

Followed by English translation, quite accurate.

216-356 English conversation follows, as well as exchanges of opinion between all parties present, largely unintelligible.

Also words by Col. Rudel unintelligible. Response in English by interpreter very good.

Conversation between Col. Rudel unintelligible. Response by

Col. Rudel also unintelligible.

English translation of the above legible, Rudel's words unintelligible. English dialogue partially legible.

357-428 Rudel speaking:

*...der Pilot, der muss sich immer konzentrieren auf Befehl, aber der Pilot sitzt sonst dauernd mit dem Kopf nach hinten, kommt scheinbar ein Jager, der mich abschiessen will, dann kann man sich nicht...konzentrieren. Wiederhole nochmal, wir haben 10 minuten oft gebraucht, um...dann kann der ihm genau sagen, jetzt und jetzt ist es richtig... (unintelligible) das Beziehungsfeld genau beobachten können, und nicht dauernd den Kopf nach hinten...*

TRANSLATION:

*...the pilot, he always must concentrate on orders,... but the pilot otherwise constantly sits with his head turned back comes what appears to be a hunter plane who might want to shoot me down, then one cannot...concentrate. I repeat again, we frequently needed 10 minutes in order to...then he can tell him precisely, now and only now it is exact (unintelligible)... the relative area, to be able to observe correctly, and not continually to turn the head back...*

Additional comments by Col. Rudel not legible, followed by:

*...der zweite Bomber...ist ein sehr schnell schießendes Maschinengewehr, vollig doppellaufig, oder dreilaufig, dann kann er*

auch die angreifenden Jäger, kann er abgeschossen. Unsere Bodschützen haben viele Flugzeuge abgeschossen, und Jäger werden bei der Angriffslust sehr gedapft, aber sie merken...und sie können abgeschossen werden, dann sind sie schon sehr, fast vorsichtig, also auch dieser Gesichtswinkel ist sehr wichtig... das bedeutet, dass bei der Konstruktion das eingebracht wird, das ein, wir haben 14 mm vielleicht haben wir noch auf 2 cm oben...das weiss ich nicht...die Waffenverserter waren...aber 14 mm geht meines Schatzes ohne Schwierigkeiten.

TRANSLATION:

...the second bomber...is a very fast firing machine gun, completely double-barrelled or three-barrelled, then he can also bring down the attacking planes. Our airborne gunners have shot down many aircraft, and fighter planes are considerably toned down in their desire to attack when they notice... Consequently this point of view is also very important...which means that during construction it be entered, that a, we have a double-barrelled machine gun, perhaps by now we already have a three-barrelled...14 mm, we have 14 mm precisely...the weapon's exports were...but 14 mm in my opinion is feasible without difficulties.

412-157 Followed by English translation of very good quality,



and more English language dialogue.

458-486 Exchange between members of the group and Col. Rudel,  
and comments by Col. Rudel unintelligible. Opinion on Col.  
Rudel's view translated by interpreter.

437-495 Closing comments by narrator, followed by closing  
statements by Col. Rudel Spokne in English:

Thank you very much for all, I hope that I  
can help you a little with my experience.

It is now 30 years ago, but a little can  
perhaps help you. I want to."

END TAPE III SIDE I

## SUMMARY

The historical parallel brought forward in this conference, of the JU-87 *Stuka* opposing the Russian armored ground formations in World War Two and the future deployment of the A-10 to Europe to off-set the massive Warsaw Pact armored advantage, is most substantial. The analogous situation, of the JU-87G versus T-34 Tank and the A-10 versus T-62 Tank, is quite clear and indisputable. The documented *Luftwaffe* success, in combating armored threats on the ground by the use of highly mobile weapons platforms in the air is worthy of more study, as it can directly benefit the effectiveness of NATO forces in contemporary Europe.

The operational expertise of Col. Rudel, and to a lesser extent other World War Two *Luftwaffe* pilots, is a relatively inexpensive resource that can significantly assist the redressing of the current NATO/Warsaw Pact military imbalance.

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**END**

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